

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
ENGINEERING SERVICES
DIVISION OF OFFICE ENGINEER

**PLANS, SPECIFICATIONS AND
ESTIMATES GUIDE**



March 2001



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FOREWORD

This "Plans, Specifications and Estimates Guide" is published by the Engineering Services - Division of Office Engineer (ES-OE) to establish uniform procedures and provide guidance for preparing construction contract documents which include plans, specifications and estimate (PS&E).

Uniformity is essential in order to ensure conformity with State and Federal requirements and Caltrans policies prior to advertisement and award.

This Guide outlines the information needed by District Office Engineer Units to prepare complete construction contract documents for submission to ES-OE. It defines subsequent PS&E processing requirements and responsibilities which are essential for advertisement, bid opening, and award.

Preparation and submittal of PS&Es for Caltrans projects shall conform to this Guide, the Plans Preparation Manual, the Standard Plans, the Standard Specifications, the Standard Special Provisions and directions found therein, and other relevant Departmental data.

The fundamental legal requirement for Caltrans to provide quality PS&Es is found in Section 10120 of the State Contract Act. It states, "Before entering into any contract for a project, the Department shall prepare full, complete, and accurate plans and specifications and estimates of cost, giving such directions as will enable any competent mechanic or other builder to carry them out".

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1 GENERAL

1-1 PURPOSE OF THE GUIDE

The purposes of this Guide are:

- to instruct engineers on how to prepare and submit Plans, Specifications and Estimates (PS&Es) for construction contracts that Caltrans advertises, awards, and administers.
 - to describe processes, policies, and regulatory requirements.
 - to define roles and responsibilities of various functional units as they relate to PS&E submittals.
-

Legal Requirements

Caltrans cannot advertise projects unless they are complete and buildable. To provide incomplete projects is a violation of the California State Contract Act. Public Contract Code Section 10120 states, "Before entering into any contract for a project, the Department shall prepare full, complete, and accurate plans and specifications and estimates of cost, giving such directions as will enable any competent mechanic or other builder to carry them out."

A district must develop and submit a complete PS&E for every project advertised by the Division of Office Engineer (ES-OE) in the Engineering Services (ES). Generally, this includes projects where the cost exceeds the cost as defined in Section 10105 of the Public Contract Code. Projects below this cost are classified as Minor "B" projects. The Administrative Service Center processes Minor "B" projects with minor contract procedures.

1-2 OVERVIEW OF THE PS&E PROCESS

- A draft PS&E is prepared: the District Project Engineer prepares the highway portion; District and other applicable functional units provide input for the District's highway portion; ES-Structures prepares the structures portion.
- The District or Region Office Engineer (DOE) and the District Project Engineer combine the ES-Structures portion with the District's highway portion.

- DOE:
 - verifies that the plans are complete, biddable, and buildable.
 - prepares, finalizes and approves the project special provisions.
 - verifies that the Engineer's Estimate is complete and accurate and is representative of the current anticipated costs.
 - verifies that the segregated estimates are correctly prepared.
 - The District Office Engineer submits the PS&E to ES-OE.
 - ES-OE verifies that the PS&E submittal is complete and prepares draft contract documents; the District provides additional information, if needed, based on ES-OE comments.
 - ES-OE sends draft contract to District with comments and requests for additional information, if needed, and District comments.
 - ES-OE incorporates District comments and additional information. At this point, all engineering work is completed, and the project is "PS&E Ready".
 - External constraints to advertising are cleared by the District. Once constraints are cleared, the project is ready to list for advertising.
 - When the project is listed, ES-OE lists the pending advertisement in the weekly "Advertisement for Bids". Bid document orders from prospective bidders are accepted one week prior to the beginning of the advertisement period.
 - During the listing period, ES-OE determines DBE or DVBE goals, prepares and reproduces the final contract documents and advertises the project in the State Contracts Register.
 - The project is advertised and Contract Documents are made available via hard copy and on the Internet.
 - If the project must be changed during the advertising period, ES-OE issues an addendum to the bid documents and to prospective bidders already holding bid documents.
 - At the end of the advertising period, ES-OE publicly opens the contract bids and determines the lowest responsible bidder.
 - ES-OE determines that all applicable requirements for award have been met by the lowest responsible bidder, the Department, and other parties to the project, and that the necessary funds are available.
 - District provides award recommendation.
 - After the District recommends award of contract, ES-OE awards the contract and notifies the District.
 - When the contractor has executed and returned the awarded contract, it is executed by ES-OE and then approved by Legal.
-

1-2.01 PS&E SUBMITTAL**Role of the District or Region**

PS&Es must be processed through the DOE units. The DOE prepares the PS&E submittal based on final design and current status of requirements that must be satisfied before the project can be advertised.

Before submitting a PS&E to ES-OE, the District is to:

- circulate plans, specifications, and estimate to appropriate District functional units for comments and concurrence.
- answer questions, clarify points, and resolve problems raised by District functional unit comments and obtain additional information about elements of the PS&E when it is clear that additional information is needed.
- finalize plans and specifications, ensuring that they conform to Caltrans policies and standards.
- prepare a complete estimate, including all segregated estimates (Refer to Section 3-9, "Segregated Estimates").

The DOE, working with the Project Engineer and responsible District functional units, also combines the plans, specifications and estimates for specialty work such as landscape, water pollution control, and electrical.

PS&E submittals that are incomplete or of unacceptable quality may be returned to the District. Unacceptable quality is defined as a project that is so incomplete that it will require extensive work by the District to make a buildable and biddable contract.

Role of ES-Structures

Projects involving structures or building work, including those projects prepared primarily by ES-Structures, are to be submitted as combined projects by districts.

ES-Structures shall provide the District with sufficient information to prepare and complete PS&E obligations a minimum of one month before the District PS&E target date.

The DOE is to notify ES-Structures of PS&E submittal to ES-OE at least three weeks before submitting the PS&E to ES-OE. The ES-Structures Division of Structures Design (DSD) is to submit the CADD generated plan sheets electronically (using the CADD Submittal Form) to ES-OE no sooner than the date that DSD is notified of the District's PS&E submittal date and no later than the District delivery date of the combined PS&E submittal.

ES-Structures and the District must concur completely on the design before the DOE submits the PS&E to ES-OE.

1-2.02 PREPARATION OF DRAFT CONTRACT DOCUMENTS

ES-OE verifies that the PS&E submittal is complete, consistent, and in conformance with current standards, policies, and legal and administrative requirements (that it is biddable and buildable). ES-OE will discuss with the District any corrections, revisions, updates and other required changes to the PS&E. ES-OE will try to obtain any additional information needed to complete the draft plans, specifications, or estimates by telephone or e-mail.

Based principally on information in the PS&E submittal, ES-OE then prepares draft contract documents.

Districts may request return of the original plans after PS&E submittal, but this may delay advertising the project. Revisions to the project submitted after the original PS&E submittal may also delay the project, depending on the extent of the changes and timing of the submittal.

PS&E Quality Rating

After verifying the PS&E and preparing the draft contract, ES-OE completes a PS&E Quality Rating for each project. The quality rating is used to provide feedback to the Districts for each project regarding quality. Statistics are developed with the quality ratings to monitor any changes in quality from year to year for each District and for the Department. This rating is also completed at PS&E Ready and, when required, at Addenda Completion. Refer to Appendix 1E.

1-2.03 DISTRICT RESPONSE TO ES-OE REQUEST FOR ACTION OR ADDITIONAL INFORMATION

Request Memo

When ES-OE cannot get the information it needs from the District by telephone or e-mail, a "Request Memo" containing a list of actions or information needed to complete the contract documents will be sent to the District. A reference copy of the Draft Contract Special Provisions is transmitted to the District with the Request Memo. The Request Memo will include a specific date when the information is to be received by ES-OE to avoid missing the Ready-to-List target date.

Response Memo

The DOE is to completely address each comment in the Request Memo using a "Response Memo". An updated BEES estimate or a statement (including BEES keyword) that the current estimate is still valid is to accompany the District Response Memo.

On expedited projects, District and ES-OE personnel may meet in Sacramento or another convenient location to resolve outstanding contract issues. The ES-OE Specification Engineer assigned to the project documents the meeting or alternative telephone discussions in a "memorandum to file" with a copy to the District.

Proposing Plan Revisions

Proposed plan revisions are to be by "redlines" showing changes to be made by ES-OE. When ES-OE approves or requests, the DOE is to submit replacement CADD files along with marked prints showing where changes were made. The DOE is to note and explain redline plan sheets, added originals, and replacement originals in the Response Memo.

Requesting Revisions to Special Provisions

Requested revisions to the contract special provisions are to be submitted in a format similar to that used for addenda (see Appendix 1B), with the revisions and their locations specified. The DOE should provide any substantial revisions as an individual electronic file.

ES-OE Changes to the Plans and Specifications

Before any changes to the project plans or specifications are made by ES-OE, they are first reviewed with the DOE for concurrence. The DOE is to verify or obtain the concurrence of the engineer or architect of record and notify ES-OE.

1-2.04 MAJOR CHANGES TO FEDERAL AID PROJECTS AFTER PS&E SUBMITTAL

After PS&E submittal to ES-OE but before the project is listed for advertisement, the District may need to make a major change in any project where full FHWA oversight is required (coded as "N" in the "E or N" Stewardship Classification). In this case, the District must obtain concurrence from the FHWA Transportation Engineer before the project is listed. (See Appendix 2I).

If major changes to such an interstate project are identified after the project is listed for advertisement, the District must report them in concise list format to the FHWA Transportation Engineer, and will obtain verbal acknowledgment that he or she has received the changes. The FHWA Transportation Engineer will review these major changes and any previously recorded major changes, and must approve the changes before the project is advertised.

Major changes consist of any one or combination of the following:

- Changing the scope of the project.
 - Inclusion of a sole source or proprietary item
 - Revision of standard design features or specific project design elements of the mainline, ramps, frontage roads, crossroads, and significant detours
 - Structural section changes and changes in access control
 - Change in specified material borrow or disposal site
 - Addition, deletion, or relocation of major structures
- Adding, deleting, or in any way changing work stipulated by written agreement between Caltrans and a private party, corporation, utility, or other governmental unit; or generating any new work under the contract that requires written agreement. This includes any environmental commitment mitigation within the limits of the project.
- Increasing by \$100,000 or more either the total contract item cost or the approved supplemental work in the Engineer's Estimate.

Corrections to plans and specifications which do not affect the scope of the project are not major changes. Changes of this type are merely to clarify the drawings and specifications so the bidders can more clearly understand the work, quality of materials, and performance required to bid and construct the project.

Examples of nonmajor changes:

- Plans - Adding or deleting details, notes, dimensions, or drawings to clarify instructions, to supplement other drawings, or to eliminate conflicts between notes, dimensions, and drawings; deleting a Standard Plan that is not needed for the proposed work.
- Specifications - Correcting typographical errors; adding missing specifications which correspond to the work shown on the plans; correcting conflicting provisions; making changes to clarify ambiguous requirements.

If the District is unsure whether a proposed change constitutes a major change, the change should be discussed with the FHWA Transportation Engineer or treated as a major change and processed as indicated above.

1-2.05 ADVERTISEMENT REQUIREMENTS

The project is Ready to List (RTL) for advertising when:

- ES-OE has received and incorporated all plan, special provision, and estimate information; and
- the District has satisfied all the requirements listed in the Attachment "A".

Projects that are RTL and funded are listed to be advertised each week. This listing starts ES-OE's preparation of the final contract documents.

The advertising period can range from 4 to 10 weeks or more depending on the cost or complexity of the project. The following table shows typical time periods between advertising date and bid opening for projects of different cost. Occasionally, the advertising period will be reduced to expedite project scheduling.

Advertising Period (Weeks)		
Project Cost		Ad Period
<\$1	Million	4 Weeks*
\$1-5	Million	4 Weeks*
\$5-10	Million	5 Weeks
\$10-15	Million	5 Weeks

\$15-25	Million	6 Weeks
\$25-50	Million	7 Weeks
>\$50	Million	8 Weeks

* Advertisement period for simple projects (less than 20 items or plan sheets) such as Soundwall projects, Maintenance projects, AC overlay, and PCC grinding type projects to be reduced to 3 weeks. Safety projects costing \$2.5 million or less and with 50 or less items are to be advertised for 3 weeks.

Advertising periods may also vary from those shown to avoid bid openings on the same day for two or more projects on the same route segment or for multiple projects over \$5 million.

Projects advertised as informal bid contracts usually have shortened advertisement periods. (Refer to Section 2-4.)

1-2.06 PREPARATION OF FINAL CONTRACT DOCUMENTS

When a project is listed for advertisement, ES-OE prepares the final contract documents for distribution to prospective bidders as follows:

- Incorporates revisions and additions to the contract special provisions.
- Adds appropriate (new or revised) Standard Special Provisions.
- Combines various redline plan revisions on one set of plan prints.
- Checks plan titles, sheet code letters, signatures, and seals.
- Adds final sheet numbering and the index of plan sheets to the Title Sheet.
- Checks the list of applicable Standard Plans and adds New or Revised Standard Plans, if necessary.
- Checks, and if necessary, corrects the BEES estimate.
- Checks consistency of items and quantities between the plans, estimate, and special provisions.
- Delineates the final plans from the redline corrections.
- Prepares the final Notice to Contractors, Contract Special Provisions and Proposal and Contract.

- Reproduces the final delineated plans, the Notice to Contractors and Special Provisions book and the Proposal and Contract Book.

When the delineation of the final plans is completed, ES-OE returns the set of redline plan prints to the DOE. (Refer to Section 5-4.)

1-2.07 ADDENDA

Introduction

Changes in contract documents during advertisement are made by the addendum process. Addenda requests are reviewed by ES-OE and are either denied or approved and processed. Addenda can be used only before bid opening; once bids have been opened, project changes can only be made by:

- rejecting all bids and readvertising as a new project, or
- writing a contract change order (C.C.O.) during construction.

Refer to Section 1-2.09 for Caltrans current policy on inappropriate additions to a contract.

An addendum can inadvertently cause erroneous or contradictory changes to a project. Therefore, addenda are issued only to correct significant errors, omissions, or conflicts in the bid documents.

Addenda Requests

Addenda requests are to be made in writing (using an addendum request memorandum) and must be processed through the DOE. The memorandum is to include revisions when required by other functional programs such as ES-Structures. Addenda requests must provide clear, concise and complete information.

It is the District's responsibility to contact ES-Structures, the ES-Division of Materials Engineering and Testing, District Traffic, and all other affected units for additional potential addendum items (for example, proposal for CPM specifications or nonstandard traffic delineation patterns). Addenda revisions must be reviewed by the District Division of Construction. The District is responsible for consolidating all items from all functional areas in the addendum request.

FHWA Addenda Approval

The District is responsible for obtaining any necessary approvals from FHWA for non-exempt Federal Aid Projects (projects requiring full FHWA review and oversight). FHWA approval is required for major changes to non-exempt Federal Aid Projects as described in Section 1-2.04 of this Guide. Caltrans has been delegated blanket approval by FHWA for addenda:

- Affecting the bid solicitations and general provisions of the Special Provisions, including:
 - Bid Opening Dates
 - Contractors Licenses
 - DBE Goals
 - Minimum Wage Rates
 - Changes Mandated by FHWA
- Correcting approved plans, specifications and estimate which do not affect the scope of the project:
 - Additions or deletions of notes, dimensions and drawings to add missing detail, note on a plan or dimension of an item, or to delete a reference
 - Typographical corrections to specifications: additions of missing specifications, correcting conflicting provisions, and changes to clarify vague and ambiguous requirements
 - Corrections to the estimate for contract items based on error only when the change is less than \$100,000.

Except for the types of addenda listed above for which Caltrans has been delegated blanket approval, other addenda on non-exempt Federal Aid Projects (projects requiring full FHWA oversight, coded as "N" in the "E or N" Stewardship Classification) require approval by FHWA. (See Appendix 2I). An executed Prior Approval-Contract Addendum form (see Appendix 1D) for these addenda will be furnished to Caltrans by FHWA for the project record, and a copy will be sent to FHWA's project file when the formal request for addendum approval is processed. Similarly, contract addenda issued on non-exempt Federal Aid Projects are furnished to FHWA at the time concurrence in award of the contract is requested. The request for concurrence in award is to include a certification that prospective bidders have received copies of the contract addenda.

Typically, only addenda which change the scope of the approved project or significantly affect the cost of the approved project should be those that require close evaluation. It may be cost-effective to withdraw the project from advertisement, redesign or rescope the project. Items to consider in withdrawing any project from advertisement include administrative costs expended in advertisement, redesign costs, potential for savings resulting from the redesign, and bidders' costs to prepare bids.

Contents of Addendum Request Memo

An addendum request memorandum is to include:

- a general description of the proposed changes and a description of the project.
- the rationale and justification for each item and the consequences of not making the change.
- a discussion of the fiscal impact if the addendum is or is not issued.
- approval from other divisions affected by the revisions.
- discussion of FHWA review and approval of proposed changes for projects requiring full FHWA oversight (coded as "N" in the "E or N" Stewardship Classification). (See Appendix 2I).
- the signature of the responsible District Division Chief or Project Manager for the project.

The addendum request memorandum is to also document:

- concurrence of responsible persons who have signed and sealed various elements of the PS&E.
- Example: If road specifications are revised and the DOE signed and sealed them, then the DOE's concurrence must be noted in the body of the memorandum.
- concurrence of the Project Manager if the bid opening date, project cost or scope is to be changed.

Appendix 1B shows a sample addendum request memorandum with the above information included.

Reasons for Denying Addenda

ES-OE will not normally issue an addendum if:

- a project is still biddable without the addendum and,
- the revisions can be implemented as economically by C.C.O.
- a proposed addendum will not alter the character of the proposed work or change who the bidders, subcontractors and suppliers might be.

Example:

- Revisions to quantities, except for Final Pay quantities, that will probably not change unit bid prices or cause item quantity adjustments are normally better handled by C.C.O. during construction.
-

Forms of Addenda

ES-OE issues addenda to bidders by facsimile or overnight mail depending on the type of addendum and time constraints. Non-bidders receive addenda by FAX or regular mail.

ES-OE will issue addenda by facsimile whenever possible. If facsimile receipt cannot be confirmed, then the addendum is sent by overnight mail. Overnight mail is used when an addendum has attachments.

Example:

- Plan sheet require transmittal of the plan sheets by mail.
-

Time Constraints

To allow sufficient time to process addenda within the scheduled advertising period, ES-OE must receive addendum requests no later than the third Monday before bid opening.

If the addendum involves major processing (for example, many plan sheet changes) or impacts pre-bid submittal review time of prospective bidders, subcontractors and suppliers, ES-OE must receive the addendum request not later than the fourth Monday before bid opening.

When there is insufficient time for processing and analyzing addenda, ES-OE will do one of the following:

- Issue an addendum to delay the bid opening date.
- Issue an addendum to cancel the current advertisement date and readvertise later.

If ES-OE receives addenda requests early, the requests may be accumulated until the third Monday before bid opening so additional requests can be combined into one addendum. However, ES-OE will immediately issue addenda that may affect how the bid is prepared, who might bid on the project, or which suppliers and subcontractors might be interested.

1-2.08 BID OPENING AND AWARD

Bid Openings

BID OPENING DAYS AND LOCATIONS

Northern California (Districts 1-6, 9, and 10)	Southern California (Districts 7, 8, 11, and 12)
Tuesday or Wednesday or both Sacramento	Thursday Irvine

Bid openings for informal bid contracts may be scheduled for any day of the week or any location.

District Recommendation for Award

ES-OE requires a district or region recommendation for all projects it awards, regardless of how much the bid is above or below the Engineer's Estimate. The process is as follows:

- The District receives a computer printout listing the bid opening results.
- The District checks agreements, both formal and informal, to determine if:
 - entities with whom Caltrans has entered into agreement have deposited the required funds and that the funds are available in accordance with agreements.
 - clearances have been received.

- permits have been issued.
- needed local agency approvals have been obtained.
- The District examines the bid to determine whether it is unbalanced as discussed in Section 2.03 of the Caltrans Construction Manual.
- District personnel discuss the bid with the apparent low bidder if:
 - the low bid is 10% or more above the Engineer's Estimate
 - there is an overrun with only one bid, or
 - the low bid is more than 25% below the Engineer's Estimate (20% if the estimate is over \$1,000,000).

The purpose of the discussion is to determine factors which influenced the contractor's bid.

The District's recommendation to ES-OE is to include comments relative to the discussion with the apparent low bidder.

- District personnel are encouraged to confer with the Headquarters Construction Program or other appropriate Headquarters functional units before deciding whether a bid is acceptable.
 - Within five working days following the bid opening, the District sends ES-OE a recommendation to award the contract or to reject bids. The recommendation is to be sent by fax to ES-OE, Attention: Awards Unit. A recommendation to award will confirm that all of the above requirements have been met and needed concurrence has been given. ESC may determine that not all requirements have been met.
 - The District is not to reveal the recommendation to any contractor or external agency or entity until the final award decision is made by ES-OE and Headquarters Management. ES-OE will inform the contractor of the Department's decision.
-

Special Situations Affecting Awards

If . .	Then . .
<p>The low bid is 10% or more above the Engineer's Estimate and the District recommends award.</p>	<ol style="list-style-type: none"> <li data-bbox="776 407 1503 443">1. The District is to discuss the bid with the bidder. <li data-bbox="776 478 1503 1864">2. The District is to answer the following questions in the recommendation: <p data-bbox="824 590 1503 699">Was competition adequate? If competition was limited, District personnel should contact potential bidders to determine why they did not bid.</p> <p data-bbox="824 737 1503 919">Why is it urgent to proceed with the project now? What are the consequences of deferring construction? Does the increased cost of the project change its priority to the extent that it should be deferred or another project substituted?</p> <p data-bbox="824 957 1503 1360">Why was the Engineer's Estimate lower than the low bid? Is the Engineer's Estimate realistic? The District should contact the low bidder (and sometimes other bidders if the overrun is substantial) to find the cause of disagreement between the bids and the estimate. If structure items constitute a large portion of the bid, comments from ES-Structures are to be included. If the District concludes that the estimate was too low and the bids are reasonable, the District is to provide information to support this conclusion.</p> <p data-bbox="824 1398 1503 1581">If the bids substantially exceed the project estimate and the District wishes to submit a "Supplemental Funds Request" to the California Transportation Commission (CTC) for the additional funds, please state this fact in the Recommendation.</p> <p data-bbox="824 1619 1503 1759">Did specific timing of bidding discourage contractors from participating, so readvertising the project would produce a lower bid? Is readvertising likely to result in higher bids?</p> <p data-bbox="824 1797 1503 1864">Should the project be modified or redesigned to reduce costs?</p>

If. . .	Then. . .
Examination of the low bid reveals obvious unbalancing to the detriment of the Department.	A recommendation of award or rejection of the low bid must be supported by written justification. In addition, the District should recommend specifically which bids would be acceptable in <u>all</u> cases where award to the low bidder cannot be made. <u>Example</u> : "The District recommends award to the lowest responsible bidder of the 3 low bidders."
The District is unable to contact the low bidder or considers such contact unnecessary or inadvisable.	The District mentions this for documentation purposes in the recommendation, and details the circumstances that made contact impossible or inadvisable.
The District recommends rejection of the bid.	The District is to include written justification in the recommendation to ES-OE to reject the bid.
Contributions from outside agencies are not on deposit.	The District does not delay recommendation, but states in the recommendation that a supplemental or fax confirmation will follow when all participating agencies have deposited their funds.
Where there are multiple bidders and the District recommends rejecting the bid but desires readvertisement or alternative procedures.	The District is to submit a request to ES-OE - Attention: Project Management Section. The request is to state whether the BEES estimate will be revised and whether changes will be made in the plans or special provisions. With multiple bidders and rejection due to inadequate funding, the district is to seek supplemental funding to justify BEES revision.

1-2.09 INAPPROPRIATE ADDITIONS TO CONTRACTS

Inappropriate additions to a contract are as follows:

- After award, substantial additions that are not part of the project as originally funded by the California Transportation Commission are not permitted. Supplemental funds are not to be added for new or additional work to be done by Contract Change Order that was not a part of the original project simply because a C.C.O. is more convenient or because the money was left over when the bids came in lower than expected.
 - The State Contract Act specifies that projects estimated to cost more than the amount specified in Section 10105 of the Public Contract Code as determined by the Department of Finance must be advertised and awarded to the lowest responsible bidder. Adding major work by Contract Change Order to avoid the bidding process is prohibited.
-

1-3 ROLES AND RESPONSIBILITIES**Project Managers**

Project Managers are responsible for ensuring that all requirements to advertise a project are satisfied within the time frame required to meet the Ready-to-List target. This responsibility encompasses all activities involved in the final preparation and processing of projects for advertisement. The Project Manager does the following:

- Makes appointments in advance with ES-OE on PS&E delivery.
- Ensures that adequate resources and time have been allowed to develop complete, quality designs.
- Ensures that support functional units (such as R/W, Structures, and ES-OE) have been given sufficient information and lead times to complete their project obligations on time.
- Ensures that the DOE has been given complete projects and provided sufficient time to prepare a complete, quality PS&E submittal.
- Ensures that project requirements listed in Attachment "A" to the PS&E submittal (see Section 2 of this Guide) are satisfied on time, consistent with the Ready-to-List target date, and ensures that ES-OE has the latest status of the Attachment "A" requirements at all times.
- Ensures that project is included in FTIP/STIP for federally funded projects

- Ensures that ES-OE requests for action or additional information are completed in an expeditious manner to meet Ready-to-List target dates.
- Ensures that the District's recommendation for award or rejection is prepared and submitted to ES-OE within 5 working days following bid opening.

When making advance delivery appointments, the Project Manager will need to negotiate with ES-OE regarding projects that require special handling and expedited schedules. During peak workload periods in ES-OE, District Project Managers and District Division Chiefs responsible for project delivery need to agree on the District's project priorities and, working with ES-OE, establish revised Ready-to-List target dates. The target dates should be based on realistic expectations of meeting other project advertising constraints.

Project Managers for Locally Funded Projects

Where the PS&E is being prepared by Caltrans for local agencies, Caltrans' Project Managers have the same responsibilities listed above. Where the PS&E is being prepared by the project sponsor, Caltrans' Oversight Project Managers have most of these responsibilities but much less control of the resources and time allowed to develop complete, quality design. The Oversight Project Manager must work closely with the project sponsor to ensure that advance delivery appointments are based on realistic schedules and expectations of meeting the various advertising constraints.

Project Engineers and District Oversight Engineers

Project Engineers, and Oversight Engineers for consultant-prepared projects, are responsible for the overall design of projects. Depending on their specific roles and on PS&E processing methods used in the District, specific responsibilities may vary, but will generally include:

- Coordinating the design input from appropriate District and Headquarters functional programs and ES-Structures, in accordance with Caltrans policies, procedures and standards.
- Obtaining required approvals for deviations from standards and policy from the FHWA, Headquarters functional programs and responsible District Division Chiefs as appropriate.
- Providing complete, quality project designs to the DOE within the time frame needed to develop complete, on-schedule PS&E submittals to ES-OE.

- Ensuring that plans are prepared in accordance with the Plans Preparation Manual and the CADD Users Manual.
 - Ensuring that contract quantities are complete and accurate and that segregated estimates are provided for projects with funding sources other than, or in addition to, state funding.
 - Promptly providing additional information or clarification requested by the DOE or ES-OE.
 - Initiating appropriate actions in a timely manner to ensure that the requirements listed in Attachment "A" are completed on target.
-

Region/District Office Engineer (DOE)

All projects must be processed by the DOE or Regional Office Engineer. Projects that are submitted without DOE or Regional Office Engineer processing will be returned to the District.

DOE units were established in three Regions and in each district with the specific charge and authority to ensure the completeness, quality and consistency of all PS&Es submitted to ES-OE for processing, regardless of whether they originated with the District, ES-Structures, a consultant, a local agency, or some other entity.

The DOE is responsible for ensuring that PS&E submittals are prepared and processed in conformance with Caltrans policies, procedures, and adopted standards and with the requirements in this PS&E Guide.

Specifically, the DOE is to do the following:

- Ensure that the project design is complete, biddable and buildable prior to submitting the PS&E to ES-OE.
- Prepare or verify and approve project special provisions to ensure conformance with Caltrans requirements.
- Verify and substantiate the need for proposed deviations from Standard Special Provisions, and fully justify deviations in the PS&E submittal.
- Ensure that a designated District draftsman has verified that the plans are in conformance with the Plans Preparation Manual and CADD Users Manual. Ensure that a completed electronic PS&E CADD Submittal Form and the Project Plan Review Check List are forwarded to the DOE and included with the PS&E submittal.
- Ensure that required approvals for deviations from standards or policies have been obtained from the FHWA, applicable HQ functional programs and/or the responsible District Division Chief as appropriate.

- Verify prior to advertisement and at the time of advertising that the Engineer's Estimate is complete and represents a fair and reasonable price for the work to be done. Prepare or verify correct preparation of segregated estimates for each project as required by Caltrans accounting procedures.
 - Ensure that the ES-Structures' portion of the project, and specialty work such as landscape or electrical, are correctly combined with the roadwork plans, specifications and estimates, and that all conflicts are resolved and duplications are removed prior to submitting the PS&E to ES-OE.
 - Provide adequate notice to the ES-Structures prior to submitting the PS&E to ES-OE.
 - Coordinate the compilation and submittal of all materials comprising a complete PS&E Submittal package including right of way certification, permits, materials information, etc. When any of this material is late, ensure that a copy is sent to all units in the distribution list. (e.g., send R/W cert to Budgets, Federal Resources office).
 - Ensure that any additional information requested by ES-OE during the preparation of the final contract documents is furnished complete and in a timely manner.
 - Prepare or review and approve addenda requests.
-

Engineering Services - Division of Office Engineer (ES-OE)

Engineering Services-Division of Office Engineer is responsible for: the final preparation and processing of district PS&E submittals as final contract documents; advertising construction contracts; and awarding contracts to the lowest responsible bidder.

Specifically ES-OE will do the following:

- Negotiate project delivery commitments with districts (appointments) and schedule ES-OE resources to meet delivery commitments.
- Verify that final project plans, specifications and estimates are complete, consistent, biddable and buildable.
- Ensure statewide uniformity of contract bid documents.
- Ensure conformance with Caltrans policies, procedures, standards, and requirements in this PS&E Guide.

- Ensure conformance with state and federal laws, the State Contract Act, policies, procedures, and regulatory requirements.
- Coordinate with the Business Enterprise Program to set Disadvantaged Business Enterprise (DBE) or Disabled Veterans Business Enterprise (DVBE) goals.
- Advertise contracts, issue addenda, and award contracts.
- Preside at Good Faith Effort hearings and other informal/formal hearings to resolve bid protests, subcontracting, and other award issues.
- Provide timely project status information to district and HQ management.

In carrying out this charge, ES-OE, working in concert with the districts and other HQ functional programs, develops and maintains the following publications, materials and systems:

- Standard Specifications
- Standard Special Provisions
- Standard Plans
- Instructions to Bidders and General Conditions for Building Construction
- Drafting and Plans Manual of Instructions
- Monthly Appointments Reports
- PS&E Guide
- Weekly Project Status Reports
- Annual Contract Cost Data, quarterly bid summaries, Asphalt Escalation Clause Index and the California Construction Cost Index
- Statewide computer system for the preparation of contract special provisions, including status reporting systems and users' manual
- ES-OE Intranet Site and Internet Site on the World Wide Web.

ES-OE is also responsible for providing functional oversight and training for HQ and district personnel involved in preparing and processing PS&Es and final contract documents.

1-4 QUALIFIED PROJECTS**Definition of a "Qualified" Project**

A "qualified" project is a project whose plans, specifications and estimate

- are complete and accurate.
- are submitted to ES-OE in such form (subject to a minimal quality, completeness, and consistency check and minor revisions) that they can be used for final contract documents with the addition of boilerplate language.
- are consistent with and complementary to each other.
- conform to Caltrans policies and standards.
- propose work which is biddable and buildable.

A checklist for the minimum project requirements for qualified projects is in Appendix 1A of this Guide.

To prepare a qualified project, an individual is to have adequate prior experience and training in preparing PS&Es. He or she is to also have adequate time to process the PS&E to qualified form. Criteria for qualification of individuals are outlined in the next section.

Caltrans' goal is for all projects submitted to ES-OE to be in qualified form. If ES-OE determines that a project submitted as "qualified" is not qualified, the project may be returned to the District or processed as a routine, nonqualified project.

ES-OE expects to receive a product from which the final contract documents can be developed with limited additional information and corrections being required from the District. On those occasions when time and resources do not permit a DOE to submit a qualified project, the District is expected to submit a project checked for consistency, completeness, and quality.

Qualification of Individuals

Each DOE person will be evaluated and deemed "qualified" when he or she has submitted two PS&Es that meet the criteria for a category of qualified projects. Categories of projects considered for qualification are:

- Minor "A" and Maintenance Roadway Projects
- Roadway projects under \$1 million
- Roadway projects under \$5 million

- Roadway projects under \$25 million
- Electrical projects
- Electrical portions of projects
- Highway planting projects or planting portions of roadway projects

The District is to indicate on the PS&E Cover Memorandum when a particular individual and project is to be reviewed for qualification.

When a project includes work from ES-Structures, the District will not be accountable for that portion of the PS&E with respect to content except as it conflicts with the District's portion. However, proper incorporation of ES-Structures Special Provisions and BEES items is the responsibility of DOE units and will be reviewed by ES-OE.

An individual will continue to be qualified as long as he or she continues to submit PS&Es designated as "Qualified" that require only minor revisions and corrections normally found in ES-OE quality, completeness and consistency checks. To avoid loss of qualified status, qualified DOE personnel should not indicate that a project is "qualified" unless the project has been prepared in a qualified form.

Processing Qualified Projects

When districts have qualified individuals for particular categories of projects, the DOE will indicate on the PS&E Cover Memorandum, by inclusion of names of qualified individuals, that the project is qualified and is being submitted in a form that is "ready to advertise". ES-OE will perform a cursory check for completeness, consistency, and quality and to ensure the project is in conformance with Caltrans policies and standards. Requests for additional information will be handled by telephone. An electronic courtesy copy of the final draft special provisions will be sent to the District.

Qualified projects are processed on a reduced schedule (refer to Table 1-5). Projects having specialty work (such as landscaping and electrical) will also be processed on a reduced schedule. Once listed for advertisement, qualified projects are processed the same as nonqualified projects.

Projects that Lose Qualified status

When the District submits a project as "Qualified", ES-OE will determine if the project quality will allow the reduced processing schedule. When the project is incomplete and not able to be processed on a reduced schedule, ES-OE will send a memo to the District stating the project is "not qualified". The reduced time schedule will be voided and a normal schedule for project processing will be applied.

1-5 SCHEDULING PROJECTS

The time required for processing a PS&E from when it is assigned for work to Ready to List (RTL) for advertising typically varies from one week to 16 weeks and depends on such factors as project cost, completeness and quality of PS&E, and clearance of constraints to advertising.

Final processing of a project from receipt of the PS&E in ES-OE to advertising involves several activities or milestone events. Target and completion dates for each milestone in the PS&E process are shown in Office Engineer's Weekly Status Report.

ES-OE produces and distributes the Weekly Status Report to provide scheduling information to district and HQ managers for projects being processed by ES-OE. Project status information is shown for all PS&Es currently being processed by ES-OE. Initial target dates for major projects delivered on schedule or early are established based on the Ready-To-List target date shown in the Project Management and Control System (PMCS) to ensure RTL target dates are met. Major projects delivered late will have target dates based on processing time as shown in Table 1-5.

Major projects are to be scheduled through ES-OE in advance by the Appointment Process, as described in Section 1-5.06. Agreed-upon target date schedules established through the negotiated Appointment Process for projects not yet delivered to ES-OE are shown in the monthly Project Appointment report.

1-5.01 SCHEDULED MILESTONE DATES

Final processing of a project from receipt of the PS&E in ES-OE to advertising involves the following activities or milestones:

PS&E Delivery Date

This is the date the complete initial electronic portions of the PS&E are received by ES-OE. This date changes if ES-OE receives revisions to the project after the initial PS&E submittal that will delay processing the PS&E.

Draft Contract Date

This is the date that ES-OE sends draft contract to the District with comments and requests for additional information, if needed to responsible District personnel for response. Such requests will be made by telephone or by memo, if necessary, following completion of draft contract processing.

District Response Date

This is the date the District has completely responded to ES-OE requests for additional information.

PS&E Ready Date

This is the date that ES-OE has incorporated the District's response and completed the final draft of the contract documents. At this time, ES-OE has verified that the preliminary draft plans, specifications and estimates are complete, biddable and buildable (without final plan preparation, final delineation and boilerplate language inclusion).

Constraints Cleared Date

This is the date that all project external advertising constraints (such as R/W, permits, and agreements) listed in Attachment "A" to the PS&E submittal (See Section 2-3.03) have been cleared and all Cooperative and other Agreements have been executed.

Ready-To-List Date (RTL)

This is the date when both the PS&E Ready milestone and the Constraints Cleared milestone dates have been met and the project is ready for advertising except for funding. The RTL date is the later of the PS&E Ready and Constraints Cleared dates.

Advertising Date

This is the date that final contract bid documents are released to bidders.

Bid Opening Date

This is the date that bids are publicly opened.

1-5.02 ESTABLISHING MILESTONE TARGET DATES**Processing Time from Receipt of PS&E to "PS&E Ready"**

Table 1-5 below shows the average processing time to complete the engineering work after a project is assigned for processing. A project is typically assigned for processing within two weeks of receipt of the complete PS&E. However, this time will vary depending on staff availability and project priority.

TABLE 1-5
TYPICAL PROCESSING TIME TO PS&E READY
(Major Projects Only)

Project Cost	Draft Contract	District Response
<\$1 Million		
Nonqualified	6 Weeks	2 Weeks
Qualified	1 Week	none
\$1-\$5 Million		
Nonqualified	8 Weeks	2 Weeks
Qualified	2 Weeks	none
\$5-\$25 Million		
Nonqualified	10 Weeks	4 Weeks
Qualified	5 Weeks	2 Weeks
>\$25 Million		
Nonqualified	12 Weeks	4 Weeks
Qualified	6 Weeks	2 Weeks

The processing times shown for a nonqualified project assume that the project is complete, consistent and of reasonable quality, and no major changes occur after PS&E submittal. Processing times will usually be longer for projects designed by non-Caltrans personnel.

As the table shows, ES-OE can process qualified projects in less-than-average time. However, initial scheduling of project target milestone completion dates is based on processing times for a nonqualified project. Scheduling associated with qualified submittals is discussed in Section 1-5.03.

Constraints Cleared Date

The target date for clearing external constraints for advertisement is established based on the last target date as shown in the Attachment "A" to be completed.

Example:

- If the target to have a permit executed is March 1, and the target to have the necessary R/W certification is June 1, the target Constraints Cleared Date will be set at June 1.

The actual Constraints Cleared Date is the date the last Attachment "A" requirement was cleared. Target RTL dates should be consistent with target Constraints Clear and target PS&E Ready dates.

Listing Period

The listing period is the time required to prepare final contract documents after a project is listed for advertising. Activities that occur during the Listing Period include:

- verifying advertising constraints and funding is cleared.
 - updating the project's Standard Special Provisions to the latest approved version.
 - performing Final Plan Preparation and final drafting of original plans - incorporating redline plan changes.
 - setting DBE or DVBE goals.
 - obtaining FHWA approval and federal aid numbers (Federal Aid Projects).
 - listing the project in the California State Contracts Register.
 - preparing the Special Provisions and Proposal & Contract books in final form.
 - reproducing the bid documents, including material information handout, for distribution to bidders.
 - preparing and approving legal authorization to advertise.
-

Advertisement

ES-OE will generally schedule target advertising dates for major projects upon receipt of a complete PS&E. Factors ES-OE considers in establishing a target advertising date include:

- the normal processing time required from receipt of the complete PS&E to PS&E Ready.
- the average time for the listing process.
- construction windows.
- funding authorization (CTC vote, FNM-76, budget verification).
- clearing advertising constraints.
- the District's recommended advertisement date.

In most cases, a project will not be listed for advertisement until it is Ready To List and funded. A project is RTL when the engineering has been completed (i.e., PS&E Ready) and all advertising constraints have been cleared. ES-OE may defer listing a project for advertisement to accommodate a construction season window or to balance the number or size of projects advertised during any one week. The latter cases will usually affect the advertising date by only one or two weeks.

Minor "A" Project

ES-OE does not normally establish milestone target dates for Minor "A" projects except when required to meet a critical need such as a construction season window. In these cases, target dates will be based on the District's recommended advertising date if the PS&E is received far enough ahead of that ad date.

Minor A projects are to be submitted in qualified form.

It is Caltrans' goal to award all Minor A projects before the end of the fiscal year (FY) in which they are programmed. For this to be accomplished, Minor A projects must be ready to list for advertisement in early March to be advertised on or before the first of May of the FY. In addition, those projects that are in areas where there is a construction season constraint must be advertised in late winter or early spring. This provides a very short period in which a large number of projects must be advertised.

ES-OE reserves staff resources to assure delivery of the planned Minor A program based on PS&Es being delivered in a qualified form within the program year. To insure that Minor "A" projects can be processed and awarded by the end of the FY, the entire program must be delivered according to the following Schedule;

- 50% by October 1
- 70% by November 1
- 90% by December 1
- 100% by January 1

Minor "A" projects not delivered as qualified by January 2nd are at risk of not being awarded by June 30th.

Note: Projects funded jointly by the state and other entities where the state cost or contribution does not exceed the Minor A limit shall be administered as minor projects, irrespective of the total cost of the project. If the state share exceeds the Minor A limit, the project must be programmed and funded as a major project. The Department is authorized to participate in such projects where the total estimated cost of the project is less than the Minor A limit, or where the total estimated cost is greater than the Minor A limit, and the state contribution does not exceed 50 percent of the total cost. In all other cases, prior to requesting a project's allocation, the Department shall obtain concurrence from the Executive Director of the Commission.

Maintenance Projects

As for Minor A projects, ES-OE does not normally establish milestone target dates for Major Maintenance projects except when required to meet a critical need such as a construction season window. In these cases, target dates will be based on the District's recommended advertising date if the PS&E is received far enough ahead of that ad date.

All Major Maintenance projects are to be submitted in a qualified form.

Because Major Maintenance funds are covered by Cash Management policies, Maintenance funds can only be used for work actually completed during the fiscal year the funds are allocated. There are three scenarios applicable to Maintenance projects:

- Advertise, award and complete all construction work in a single fiscal year.
- Start the construction in one fiscal year and complete the work in another fiscal year (i.e., split financed between two fiscal years).
- Allocate a nominal funding level in one fiscal year, such as \$1, so a project can be advertised and awarded. Then construction is started and completed in the following fiscal year after adoption of the State budget.

Each of these scenarios requires careful timing of the advertising and award to ensure that construction occurs during the fiscal year for which the funds have been allocated.

Projects to be advertised, awarded and constructed during the same fiscal year should be submitted to ES-OE as follows:

Construction Time Needed	Submittal Time Frame
2 Months	Between April and September
3 Months	Between April and August

Split financed projects should be submitted in November or December depending on the length of construction and the amount of work to be funded in each of the fiscal years.

One Dollar projects should be submitted following the same schedule as Minor A projects.

The funding method to be used must be indicated in the PS&E submittal and the Budget Verification of Highway Maintenance Funds form (See Section 2).

1-5.03 FACTORS AFFECTING PROJECT SCHEDULES

The factors listed below will affect the setting or achievement of project schedules. Before submitting a PS&E or committing to a PS&E delivery date when making an appointment, the DOE should carefully consider those factors that will cause a project to be delayed.

Early Submittal

Districts are encouraged to submit projects early. If staff becomes available in ES-OE, these projects may be assigned early for processing. This will free up staff in the originally scheduled time slot to begin processing a new District project or to advance the schedule of a project scheduled to be delivered later.

Qualified Submittal

Districts are encouraged to submit projects in a qualified form as discussed in Section 1-4. Depending on the size of the project and the completion of the requirements listed in Attachment "A", the total processing time to PS&E Ready for qualified projects can be significantly reduced. Qualified projects will also free up staff to advance early submittals or to take new appointments.

Initially, ES-OE will establish appointment target completion dates for qualified projects based on the average processing times for nonqualified projects shown in Table 1-5. Qualified projects that do not have appointments will have a higher priority for assignment than nonqualified projects without appointments.

The DOE is to identify projects submitted in a qualified form in the PS&E cover memo. As noted earlier, nonqualified projects identified as "qualified" may result in District Specifications Engineers losing their "qualified" status.

Completeness and Quality of the PS&E

The District PS&E should represent the final design for the project, with no known revisions or additional information to be developed after delivery of the PS&E to ES-OE. The District is to complete design and preparation of the PS&E and obtain all reviews and approvals before submitting the PS&E to ES-OE.

Revisions requested by the District after the PS&E has been submitted may delay the project. When significant additional work by ES-OE is required as a result of revisions to the project, other District projects may be affected. Revisions may require ES-OE to reevaluate the PS&E received date and reschedule target milestone completion dates.

Late Submittal

Projects that will miss a previously scheduled PS&E delivery appointment date will have to be rescheduled through the appointment process for the next available appointment opening. Late submittals may still be able to meet the negotiated PS&E Ready date if ES-OE is notified in advance that the project will be submitted late and if the project is submitted in a qualified form. In these situations, the District needs to notify ES-OE immediately to ensure that the project is properly assigned.

District Response

The District has a short period to respond to requests for additional information. Included within this period is the time ES-OE needs to incorporate the additional information to complete the contract documents to PS&E Ready. ES-OE will advise the District of the date the response is needed in order to keep the project on schedule. A District that delays in providing all of the requested information, including external clearances, may cause the project to miss scheduled target milestone completion dates.

Funds Request

With few exceptions, the District must submit a project funds request for Capital Outlay Projects (for example Minor "A", Majors, and so on) to the Headquarters Budgets Program. A copy of the funds request must accompany the PS&E submittal. To avoid any impact on project scheduling, the District should submit the project funds request as soon as the project estimate is finalized.

Projects requiring a California Transportation Commission (CTC) vote cannot be advertised until project funds are voted by the CTC.

While projects that are totally funded by a local agency do not require a CTC vote, a fund request is to be submitted to the Budgets Program for preparation of an Information Report for the CTC.

Factors Affecting Locally Funded Projects

A locally funded project cannot be advertised until all funding is covered by cooperative agreement(s) that are fully executed and approved by the Legal Service Center.

If local federal funds are involved (CMAQ, STP, etc.), an "Authorization to Proceed", Form FNM-76, must be approved before the project can be advertised. This form is prepared by the District and transmitted electronically to Headquarters Local Programs for approval.

Relief from Ready-To-List (RTL) Target

Projects that have missed the Programmed RTL target date will be identified from information in the ES-OE data base. ES-OE will review this information for causes of the delay as outlined below. Projects missing the RTL target for reasons apparently beyond the control of the District will be identified and analyzed as possible candidates for District relief from the RTL target. When it can be determined in advance that a project might miss a negotiated RTL target established through the appointment process, ES-OE will work with the District to develop an action plan to get the project back on, or as close to, schedule as possible.

ES-OE can analyze only those factors which are within its control. External factors must be analyzed by the District or the responsible functional unit.

Factors considered in the analysis include:

- **PS&E Delivery Date:** Was the complete PS&E delivered to ES-OE on time to meet the RTL target under a normal processing schedule? ES-OE will determine if the project was qualified and should have been processed under an accelerated schedule.
- **Negotiated Appointment Schedule:** Was the agreed-upon appointment schedule consistent with PMCS target dates? Did the District meet the appointment delivery date? The District is responsible for revising the appointment contract to be consistent with the PMCS target dates. Projects delivered late run the risk of ES-OE Staff not being available until much later.
- **Quality and Completeness of PS&E Submittal:** Was the design complete and of sufficient quality to be processed to RTL within the normal processing time? Was the project submitted in a usable form? (That is, could the CADD file be plotted and printed? Did the plans conform to drafting standards such that they could be reduced for advertising? and so on.)
- **Major Revisions:** Were major revisions submitted after the original PS&E submittal? Were they extensive enough to delay meeting the PS&E Ready target date?
- **District Response:** Did the District respond to ES-OE requests for additional information in a timely manner? Were issues completely resolved by the District? If not, the District Response date will not be entered on the ES-OE data base and the "Remarks" field of the Weekly Status Report will note that an incomplete response was received.
- **Constraints Clear:** Were all requirements for advertising satisfied, such as R/W certification, permits, and agreements?

- **Construction Window:** Was the project unable to be advertised due to a construction window constraint? ES-OE will not advertise projects with constraints which delay construction an unreasonable period of time following contract award. A project with constraints which prohibit all construction during the winter season would not be advertised for award in October.
- **Negotiated Delay:** Occasionally, the District or Project Manager requests that a specific project be expedited, which may require work on other projects to be deferred. In these situations, the District will identify the project or projects that will be delayed so that ES-OE can reassign resources to meet an expedited schedule. Projects delayed for this reason will be identified in the "Remarks" field of the Weekly Status Report.
- **ES-OE Delay Due to Peak Workload Period:** Was the delay caused by staffing priorities in ES-OE? Districts will be granted Relief from Ready To List if the delay is due to ES-OE staff not being available.

ES-OE will take all reasonable actions to acquire additional staff during peak workload periods, including using retired annuitants, experienced district service center and Headquarters personnel on temporary loan, and reasonable overtime.

- **ES-OE Delay Other than Workload:** Was the project delayed by ES-OE for reasons beyond the control of the District other than workload? The District will be granted Relief from Ready To List if the delay is due to ES-OE and was beyond the District's control.

In the analysis of this item, other factors will be considered, such as: Was assignment of this project deferred because a target date for a required clearance was later than the RTL target and the project would miss the target in any event? (The theory is, work on feasible projects first.) Did the responsible ES-OE Specifications Engineer leave ES-OE and the project had to be reassigned?

Regardless of the status of "PS&E Ready", relief will not be granted if advertising constraints were cleared after the RTL target date.

When granting relief from the RTL target, ES-OE indicates this in the Weekly Status Report. If relief is granted because of an ES-OE delay, ES-OE will send a memo to that effect to the Chief Engineer. Copies of the memo will be sent to the District Director; the Chief, Division of Program Evaluation and Analysis; and the Project Manager.

If relief is not granted for a project missing the RTL target date, Project Managers may request a reevaluation of the analysis for granting relief. ES-OE will summarize the facts leading to the original decision for not granting relief. A copy of the summary report will be sent to the Chief Engineer; the District Director; the Chief, Division of Program Evaluation and Analysis; and the Project Manager.

1-5.04 ASSIGNMENT OF PROJECTS

There are several periods during the year when the workload in ES-OE exceeds its capacity to meet target milestone completion dates for all projects. When these peak workload periods occur, projects that have not been scheduled through the appointment process are processed in accordance with statewide priorities. ES-OE will keep its commitment to deliver projects scheduled in advance through the Appointment Process if all other conditions are met.

1-5.05 SPECIAL HANDLING OF CRITICAL PROJECTS

ES-OE recognizes that some projects have critical scheduling requirements, such as a construction window or an award deadline of June 30th. The districts can designate certain projects as "critical", and ES-OE will provide special handling of these projects, including developing additional staff resources, if possible, and working overtime. However, ES-OE has limited flexibility to meet all critical project schedules. The districts are requested to review their entire delivery plan and limit the number of projects designated as critical to 10% of the major (non-maintenance) project costs scheduled for delivery during each fiscal year.

Critical Projects must be scheduled through the appointment process a minimum of two months before the planned submittal to ES-OE. This is to ensure that adequate staff resources can be reserved for the project or to allow time to obtain additional staff from other sources.

ES-OE will work closely with the districts to find ways to meet high priority project needs. For example, a project with a construction season can be scheduled for an early PS&E delivery and "PS&E Ready" when there is ES-OE staff available, even though the project may not be RTL or advertised until months later.

Expediting Critical Projects

Expediting critical projects (that is, processing in less than the normal processing time) can affect ES-OE's ability to work on other projects. In many cases, ES-OE may have to defer work on other projects to accommodate an expedited project schedule.

Single Focal Point expediting of a critical project must be requested in writing by the District. The District is to provide the following information in the request:

- An explanation of the need for the expedited schedule, including a discussion of the consequences if the project is not expedited.

- An explanation of why the project was not submitted earlier to allow for normal processing.
- A list of the specific milestone target dates that are to be met.
- Identification of other District projects with scheduled appointments during the same time frame that can be rescheduled to accommodate the expedited processing.

In order for ES-OE to expedite a project, the project is to meet the following general criteria:

- The PS&E is to be complete and of good quality.
- The proposed schedule is to be feasible. That is, all project requirements listed in Attachment "A", including funding, are to have been met or have target completion dates that will be met on or before the Ready-to-List date.

In addition, the District is to be committed to immediately providing any additional information that ES-OE may request.

When a request to expedite a critical project is made, ES-OE may contact the District Project Manager or Single Focal Point to discuss the project requirements. Other District project schedules may be impacted by the expedited schedule. If ES-OE and the District can agree on revised schedules for these other projects, an appointment to expedite a critical project can usually be made.

1-5.06 PROJECT APPOINTMENTS

An appointment is a commitment between the District and ES-OE to meet project delivery milestones following an agreed-upon schedule. Appointments for PS&E delivery and ES-OE's commitment to meeting project delivery milestone target dates are made by mutual agreement based on

- ES-OE's staffing capacity to meet the negotiated target dates, and
- the District's commitment to deliver the complete project by the appointment date and to respond to ES-OE's requests for additional information, if needed, within the time frame specified.

Districts should request appointments for all major non-maintenance projects and for other projects that have Programmed RTL target dates, including seismic retrofit and locally-funded projects.

Appointment commitments with ES-OE may be made as early as the PSR stage. Appointments are made on a first come, first served basis. If ES-OE has already accepted appointments up to its workload capacity, appointments may not be confirmed for the original requested date and a new revised appointment date is to be negotiated between ES-OE and the District.

ES-OE provides a monthly "Project Appointment" report with a graph showing ES-OE statewide commitment in staff versus staff available to deliver projects. The graph is useful for identifying when appointments for PS&E deliveries can be made. Where possible, Districts should request appointments in the "valleys" between the "peaks" shown on the graph.

When a district requests an appointment or specific project schedule, ES-OE will commit staff and other resources to the project schedule unless all available resources for that time frame have already been committed.

In order to level incoming statewide workload, ES-OE will advise the District about appointment windows and the need to plan PS&E delivery dates. The Project Manager, ES-OE, and the local agency sponsor, if involved, need to mutually agree on appointment commitments. If the negotiated milestone target dates deviate from programmed delivery dates, the District is responsible for requesting changes to Programmed target dates in accordance with approved procedures.

The monthly Project Appointment report shows the target dates and the appointment target dates. Projects will be flagged for the District's attention and action when the Programmed target dates are before the negotiated appointment dates. ES-OE will commit to meeting appointment dates.

While it is Caltrans' goal for the districts to submit projects in a qualified form, appointments for ES-OE processing, from receipt of PS&E to "PS&E Ready", will be based on processing times for nonqualified PS&E submittals that are complete and of reasonable quality. These processing times are shown in Table 1-5, "Processing Time to PS&E Ready". When districts submit projects in qualified form, it usually allows ES-OE to open up appointments for late or unanticipated projects.

Appointment Requests

A district can do one of the following to make or revise project appointments with ES-OE:

- Enter requested appointment dates on the page of the monthly Project Appointment report where the specific project appears and send that page to ES-OE.

- Enter requested appointment dates on the Appointment Request Form attached to the monthly Project Appointment report and send the form to ES-OE. (Appendix 1C)
- Contact ES-OE by telephone or e-mail to request appointment dates.

A District should request an appointment only when the District and ES-Structures have verified that they can meet the PS&E delivery date.

When requesting an appointment, the District must provide the following information:

- Expenditure Authorization (EA)
- county-route-kilometer post limits
- estimated construction cost
- appointment dates
- PS&E delivery date
- PS&E Ready date (if different from RTL date)
- Ready-to-List date (RTL)
- Recommended Advertising Date
- critical milestone dates such as ad date and construction window

The District should follow the guidelines provided in Section 1-5.05, "Special Handling of Critical Projects", when requesting appointments for projects that the District has determined to be critical.

If the District misses or anticipates missing an existing appointment, the District Appointments Coordinator should contact ES-OE immediately to make the appointment opening available for another project. When the District is ready to commit to a new PS&E delivery date, a new appointment can be negotiated.

1-6 INFORMAL BID PROJECTS

The Informal bid process is sometimes used in emergencies to reduce time between the receipt of the PS&E in ES-OE and the start of work.

The District should follow the guidelines provided in Section 2-4, "Informal Bid Projects", when required on projects which meet the conditions of Section 10122 of the State Contract Act.

1-7 CONSULTANT-PREPARED PROJECTS

The DOE is to review and process PS&Es prepared by consultants in the same way as PS&Es prepared by Caltrans. A consultant-prepared PS&E is to be complete, consistent, and of reasonable quality and is to conform to Caltrans policies and standards.

Role of District

The District Oversight Engineer's roles and responsibilities on consultant-prepared PS&Es are essentially the same as for Project Engineers on district-prepared PS&Es, except the District Oversight Engineer will not prepare the plans. (See Section 1.3, "Roles and Responsibilities.")

Close cooperation between the Oversight Engineer, the District Office Engineer and the consultant will help prevent delays in processing the PS&E in both the District and ES-OE. ES-OE Specification Engineers will not deal directly with the consultants unless a District representative is present.

In addition, the District Oversight Engineer should enlist the aid of both the District Drafting Supervisor (when beginning development of the project plans), and the DOE (at the draft PS&E stage). Their expertise can greatly influence the quality, consistency, and completeness of the final PS&E.

APPENDIX 1A. (Checklist of Minimum Project Requirements for Qualified Projects)**PLANS:**

- ☐ Plans conform to drafting standards contained in the Plans Preparation Manual (PPM), Section 2 and reviewed by District Draftsperson.
- ☐ All plan sheets for PS&E are complete and accounted for. Submit CADD generated sheets with a PS&E CADD Submittal Form. Include a plot file for each sheet file to be plotted.
- ☐ Standard 22" x 34" sheet formats are used.
- ☐ Caltrans Standard seals and signatures are on all sheets.
- ☐ Title sheet and project title are in conformance with Section 2 of PPM.
- ☐ Plan sheet names and identification codes are correct.
- ☐ Applicable Revised Standard Plans and New Standard Plans sheets are identified.
- ☐ There are representative and sufficient typical cross sections.
- ☐ Work shown on plans is complete, biddable and buildable.
- ☐ There are sufficient construction details for items not covered by Standard Plans.
- ☐ There are sufficient summaries of quantities.
- ☐ Drainage profiles are included.
- ☐ No specifications nor proprietary items are shown on plans.
- ☐ High and low risk facilities are properly identified (Elevations and alignment are shown where required by the "Manual on High and Low Risk Underground Facilities within Highway Rights of Way").
- ☐ Terminology on plans matches item in estimate.
- ☐ Standard abbreviations and symbols are used.
- ☐ Stage construction is adequately shown on plans.
- ☐ Required Local Agency plans are included, not referenced.

APPENDIX 1A (Continued)**SPECIAL PROVISIONS:**

- ☐ Signatures and Seals for preparation of special provisions have been provided with the PS&E submittal.
- ☐ All work shown on Typical Cross Sections, Layouts, etc. covered by Standard Specifications or Special Provisions, including measurement and payment.
- ☐ Current Standard Special Provisions (SSPs) used with SSP instructions followed.
- ☐ Structures, landscape, electrical and highway special provisions complement each other and are properly combined.
- ☐ Terminology used agrees with that used in estimate and plans.
- ☐ Standard style and format is used, especially with measurement and payment clauses.
- ☐ Use of Trade Names is in accordance with policy.
- ☐ Required Local Agency specifications included in State format and style if possible.
- ☐ Applicable Standard plans are Identified.

BEES ESTIMATE:

- ☐ All work covered by either Contract Items, Supplemental Funds, or State Expenses.
- ☐ All State-furnished materials listed in special provisions are included in the estimate.
- ☐ Standard contract items are used from BEES Coded Contract Item List.
- ☐ Standard units of measure are used.
- ☐ Reasonable unit prices are used.

APPENDIX 1A (Continued)

- ☐ Estimate quantities are appropriately rounded to agree with quantities shown on plans.
- ☐ Specialty items are identified.
- ☐ Structure and highway items are correctly combined (avoid double counts or missed counts).
- ☐ Segregated funds are included in the combined project estimate.
- ☐ Final pay items are identified.

MISCELLANEOUS:

- ☐ Attachment "A" is completed (All project constraints have been executed or in process).
- ☐ Funding is being addressed.
- ☐ Railroad involvement is identified.
- ☐ Nonstandard practice and items of work are justified, and deviations from policy are approved prior to PS&E submittal.

APPENDIX 1B (Sample Addendum Request)

Memorandum

TO: Chief, Division of Office Engineer
Attention: Office of PS&E
FROM: DEPARTMENT OF TRANSPORTATION - 04
SUBJECT: Request for Addendum

Date: May 25, 1998
04-123454

Request an addenda be issued to redefine the limits of trimming of plants for sound wall construction, to correct a final pay quantity, and to change a structural section for construction on State Highway in Sonoma County in and near Cottonwood.

The structural section beneath the concrete barrier has been revised. This is a significant change that will save the State about \$100,000. The change was the result of a cost-reduction study after submittal of the PS&E to reduce the project's cost to within its budgeted cost.

Clearing and grubbing was erroneously given standard treatment. The environmental report requires that clearing and grubbing be kept to a minimum in this environmentally sensitive area. The impact on the work and cost of this change in clearing and grubbing is minimal. It could probably be handled by contract change order. It is offered in anticipation that an addendum will be justified for other reasons and that the effort to incorporate this change could be incidental.

The final pay quantity of minor concrete (minor structure) was erroneously calculated and checked. The actual quantity is twice what is shown in the estimates and on the plans. The omitted quantity is minimal and amounts to some \$1000. To leave it as it is would be biddable, as adequately provided for in the Standard Specifications, but would not be consistent with our policy on final pay quantities. An addendum would not have been requested for this change alone.

The proposed addendum should address the following items:

Project Plan Sheet No. 3 and 21 are revised. [Redline prints of our proposed changes are attached.]

In the Special Provisions, in Section 10-1.11, "Clearing and Grubbing," delete the second paragraph and add the following:

"Only such trimming and pruning of plants as is necessary for construction of sound wall shall be performed. The Engineer shall be notified a minimum of 48 hour prior to any trimming and pruning of plants necessary for construction of sound wall."

In the "Copy of the Engineer's Estimate," the estimated quantity of Item No. 31 is revised from 6 m³ to 10 m³. [A redline print of the Engineer's Estimate is attached.]

Division of Structures has been contacted and they had no addendum items to include.

Ken Jones, FHWA Transportation Engineer, has reviewed the structural section change and concurred with the proposed change on May 20, 1994.

John Smith, DOE, has prepared the specification changes required. No other staff approval were necessary.

District Division Chief, Project Development
Attachments:
cc: IBG

APPENDIX 1C (Appointment Request Form)

Engineering Services - OE

Date:

APPOINTMENT REQUEST FORM

☐ New ☐ Revise ☐ Cancel Appt ☐ Delete project from list ☐ Expedite
 (will not be submitted to ES-OE)

1) District-EA: ____ -- ____ Co. _____ Rte. _____ PM _____

2) Submitted by: _____ Phone: _____ FAX: _____

3) Type of Work: _____ Estimate: _____

4) Primary Work Type: ☐ Road/Structures ☐ Landscape ☐ Electrical ☐ Building
 (Check One)

5) Appointment Dates: (Enter Month/Day/Year. Make entries for "B" or "C," only if requesting non-standard processing times.

REQUESTED DATE

A) PS&E: _____

B) RTL: _____

C) ADV: _____

DO NOT WRITE IN THIS SPACE - FOR ESC
USE ONLY**ASSIGNED DATE****REMARKS**

Rec'd _____ Entered _____

6) Submittal will be "Qualified?"

☐ Yes ☐ No
Appt: ☐ Confirmed ☐ Unconfirmed

7) Identify and explain any target date above which is critical:

8) List or explain any advertising or construction constraint:

9) Remarks:

Send to Appointment Engineer, ES-OE: FAX (916) 227-6214 or CALNET 8-498-6214.

Questions: (916) 227-6212, or CALNET 8-498-6212.

This form will be processed then returned to sender as a record of the appointment transaction.

APPENDIX 1D (Prior Approval Contract Addendum Form)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CALIFORNIA DIVISION OFFICE

RECORD OF PRIOR APPROVAL
FOR CONTRACT ADDENDUM

PROJECT NO.	ADDENDUM NO.	CONTRACT NO.	DIST-CO-RTE-PM
-------------	--------------	--------------	----------------

REQUESTED BY	<input type="checkbox"/> CALTRANS HQ <input type="checkbox"/> RE/DISTRICT	DATE
--------------	--	------

PROPOSED CHANGE:

REASON FOR CHANGE:

RECOMMENDATION FOR APPROVAL

APPROVAL

Transportation Engineer

Chief, District Operations

DATE _____

DATE _____

Rev 4/93 (Copy to CT)

APPENDIX 1E (PS&E Quality Rating)

Dist EA	06278611	Items	288
Estimated Cost	\$53,099,000	Road Plans	
Area Senior	JWC	Structure Plans	
Spec Engineer		Total Plans	
Type of Work	New Freeway		
Title	Construction On State Highway in TULARE COUNTY IN AND NEAR VISALIA FROM PLAZA DRIVE TO ROUTE 63/198 SEPARATION (MOONEY BOULEVARD)		

At Draft Contract

At PS&E Ready

At Addenda Completion

4.1 to 5.0	PS&E's that require minor revisions such as spelling corrections, SSP updating, and other incidental revision to plans.
3.1 to 4.0	PS&E's processed under Project Reviewers Guide. Qualified major projects and most Minor A Projects can be classified within this range.
2.1 to 3.0	PS&E's that require listing of PS&E comments and responses, generally most major projects will fall under this range.
1.1 to 2.0	PS&E's with extensive listing of PS&E comments and responses. The normal allotted review time for these types of projects are not sufficient.
0.0 to 1.0	PS&E's with major errors, omissions, and inconsistencies. These types of PS&E's should be returned to the District for corrections.

2 PS&E SUBMITTAL

2-1 GENERAL

The Engineering Services - Division of Office Engineer (ES-OE) requires that the District submit a PS&E for every project ES-OE advertises.

PS&E submittals for informal bid projects have additional requirements as described in Section 2-4.

2-2 PS&E SUBMITTALS FROM DOE

Project PS&E and related submittals from the Region or District Office Engineer (DOE) are sent to both ES-OE and to other involved Caltrans Programs.

2-2.01 PS&E SUBMITTALS FROM DOE TO ES-OE

DOE Electronic PS&E Submittal to ES-OE

Districts will be credited with a PS&E Delivery Date when the following applicable electronic transmissions, sent by the District Office Engineer (DOE), are received by ES-OE.

PS&E Submittals are to be sent as follows:

1. DOE transmits the PS&E Submittal documents from DOE computer to the HQOE Fileserver or sends the documents by FAX to ES-OE.
2. DOE sends a notification to the e-mail address: "OE Submittal" with a cc: to the ES-OE Area Senior Engineer or Special Projects Engineer.

The minimum applicable electronic transmissions to achieve a District PS&E Delivery Date are as follows:

- PS&E Cover Memorandum (See Section 2-3.02 and Appendix 2A)
- Attachment "A" (See 2-3.03 and Appendix 2B)
- DOE and Structures CADD Submittal Form (See Section 2-3.01 and Appendix 2F)

- Export file of the PS&E Cover Memorandum and Attachment A: (An electronic file created in FileMaker pro that consists of data taken from the fields in the PS&E Cover Memorandum and Attachment A.)
 - Project Plan Review Check List(s) (See Appendix 2H)
 - Proposed Special Provisions - including lane closure charts (See Section 4)
 - Combined (roadway and structures) file of BEES (See Section 3)
 - Special Provisions Signature and Seal Sheets (See Section 2-3.04)
 - Project Engineer's Certification Letter of Utility Facilities for High/Low Risk with seal and signature. This is required for every project (See Appendix 2J). All projects shall conform to Caltrans policy on high and low risk underground facilities within highway right of way. Any deviation from the policy shall be submitted to the Program Manager, Design & Local Programs, for approval. For this certification, Project Engineer is considered to be the person in responsible engineering charge of the project.
 - Copy of Request for Funds (See "Funding Information" in Section 2-3.03).
 - Budget Verification of Highway Maintenance Funds Form - required only if maintenance funds are to be used. (See Appendix 2C).
 - Budget Verification of Minor B Funds - required only if Minor B funds are used in project (See Appendix 2C).
 - Budget Verification for Special Funded Projects Form - required only for funds not voted by CTC. (See Appendix 2K).
-

Remaining PS&E Submittal to ES-OE

The following applicable remaining data is to be received by ES-OE before the project can be made "ready to list". These documents should be identified in the Attachment A (Section 2-3.03).

Documents should be sent as described above for PS&E Submittals. If the FAX or scanned document is illegible, a hard copy should be sent to ES-OE, Attention: ES-OE Scheduling Engineer.

These documents may include, but are not limited to the following:

- Right of Way Certification Letter.
- Railroad Clauses

- Copy of Permits and Agreements (Water Quality Control Board, Department of Fish and Game, Cooperative, Interagency and Freeway Agreements and so on)
- Informational Handout (See Section 2-3.03)
- Justifications Letters for deviation from Standards and Policy (See Section 2-3.03)

Note: If they are available at the time, any or all of these documents should be sent with the initial DOE Electronic PS&E Submittal to ES-OE. It is the responsibility of the district that all applicable documents are received by ES-OE to achieve the RTL delivery milestone.

2-2.02 DOE PS&E RELATED SUBMITTALS TO OTHER CALTRANS PROGRAMS

The PS&E Package to other Caltrans Programs

DOE is also required to send PS&E Submittal information to other applicable programs.

The PS&E Package to other applicable Programs consists of the following items:

- Cover Memorandum (See Section 2-3.02)
- Attachment "A" (See Section 2-3.03)
- Budget Verification of Highway Maintenance Funds Form - this is required only if maintenance funds are to be used (See Appendix 2C)
- Budget Verification of Minor B Funds - required only if Minor B funds are used in project (See Appendix 2C)
- Project Estimate of Cost
- Print-out of proposed special provisions

Copies of the "PS&E Package" or portions of it required by various Caltrans Programs are to be submitted directly to those involved at the same time the initial DOE Electronic Submittal to ES-OE is made. See the listing of Caltrans Programs at the end of the PS&E Cover Memorandum in Appendix 2A; delete cc's that are not involved in the project. ES-OE will send a copy of the PS&E Package to the Federal Highway Administration for applicable Federally funded projects.

2-3 DISCUSSION OF DOCUMENTS TO BE SUBMITTED

This discussion is limited to the project plans, "Cover Memorandum", Attachment "A", and the "Signature and Seal Sheet". Other documents submitted with the PS&E are discussed in detail in other sections of the Guide.

2-3.01. PROJECT PLANS

The plans portion of the PS&E Submittal sent to ES-OE shall consist of the following:

- Submit CADD-generated plan sheets electronically using the PS&E CADD Submittal Form and data transferred over the network. (Refer to Appendix 2F).

Plan sheets developed on CADD but submitted to ES-OE as original hard copy are not considered to be CADD sheets.

State the number of CADD-generated plan sheets being transmitted electronically in the place provided on the Cover Memorandum,

Prints of the project plans are not required as part of the PS&E submittal sent to ES-OE.

ES-Structures is to submit CADD-generated structure final contract plan sheets transmitted electronically to ES-OE. Final structure plans prepared by local agencies or consultants are to be sent to ES-Structures for final processing.

2-3.02 COVER MEMORANDUM

The PS&E:Cover Memorandum (Appendix 2A) should be as complete and specific as possible. This information will determine how ES-OE processes the project. The Cover Memorandum also serves as a letter of transmittal for the PS&E Submittal and a means of sending PS&E packages to others. The Cover Memorandum is to be signed by the District Office Engineer, and also by District Reviewers if the PS&E submittal is "Qualified" or is to be reviewed for "Qualification".

Bidders Inquiry Request Form

Indicate if the District will require the usage of Bidder Inquiry Request Forms in the area provided on the Cover Memorandum.

When Bidder Inquiry Request Forms are required, inquiries must be submitted on that form in order for the inquiry to be considered.

Cross Sections

Indicate whether the District will make cross sections available to bidders in the area provided on the Cover Memorandum. Cross sections are not considered part of the contract documents. They are supplemental information included for the convenience of bidders.

Cross sections will not normally be made available to bidders if the plans include enough information in typical cross sections, profile grade information, earthwork tabulations, super-elevation diagrams, contour grading plans, and/or pavement elevations.

If cross sections were prepared by the District to assist in the design of a project, they are to be made available to bidders. Bidders will be notified in the "Notice to Contractors" that such cross sections will be available for inspection, and copies of the cross sections can be obtained at the bidder's expense through the District Office. If the District certifies in the PS&E submittal that cross sections are necessary for bidding purposes, they may be included with the project plans.

2-3.03 ATTACHMENT "A"

Attachment "A" (Appendix 2B) identifies and summarizes the status of all external constraints, such as R/W certification, permits, and agreements, which affect the ability of the project to be listed for advertisement.

Every section in the Attachment "A" must be addressed. This attachment is to be signed by both the Project Manager and the Deputy District Director responsible for project delivery. The District is responsible for clearing, monitoring and keeping current, the items listed in this attachment from when the PS&E is submitted to ES-OE until the final contract is awarded.

If constraints are deleted or added to the Attachment "A" sent with the PS&E Submittal, an updated, signed Attachment "A" is to be resubmitted to the ES-OE Scheduling Engineer. Submittal of an updated Attachment "A" is not required for constraint target date changes.

Submittal of an individual replacement sheet for the Attachment "A" is not acceptable.

ES-OE cannot log a project as Ready-to-List (RTL) until all the identified constraints to advertising in Attachment "A" have been cleared and the PS&E is ready.

Right of Way

All projects require right of way certification even when no additional right of way is needed for the project. Include the type and date of certification. If right of way certification is not available, give the target date for certification and the type of certification.

Give an explanation for target date or for Certification No. 3. Consider carefully whether a Certification No. 3 is necessary. Justification for its use might include:

- weather
- construction window
- loss of a funding source
- considerable dollar savings with an earlier advertisement.

In any event, a Certification No. 3 is to be upgraded to a Certification No. 1 or No. 2 three weeks prior to bid opening. Provide the target date for the upgrade. List unusual conditions in the certification which may affect the District's ability to upgrade certification.

All projects which have a Certification No. 3 with workarounds must have that certification updated three weeks prior to bid opening. A right of way Certification No. 3 with workarounds on non-exempt Federal Aid Projects (projects requiring full FHWA oversight) must be approved by FHWA.

Railroad Clearance

If a railroad is present on the Title Sheet of the project plans, contact the ES-Structures, Railroad Agreements Section to confirm whether or not the railroad clearance is involved.

A railroad may be involved even though no work is within the railroad right of way. If the Contractor needs to cross or enter railroad right of way to gain access to highway work, needs to work on an underpass, or (for example) needs to jack a pipe under the railroad, address the matter of railroad involvement.

If the Railroad Agreements Section determines railroad clearance is required, give the date or target date for clearance. If a railroad clearance memo is required, but has not been obtained, provide a status of the clearance on the Attachment A.

If there is a Construction and Maintenance (C&M) agreement or service contract with a railroad, state the railroad company name, the agreement or Contract Number, and the amount of the cost estimate for services to be performed by Railroad work forces.

Copies of correspondence and plans sent to railroad companies should also be sent to the ES-Structures Railroad Agreements Section. Submit railroad information to the Railroad Agreements Section well in advance to prevent delays in project scheduling. If there are plan changes subsequent to sending the plans to the railroad, contact the Railroad Agreements Section for advice regarding the need for a follow-up plan submittal to the railroad.

Environmental Status

- Indicate the type of environmental clearance by checking the appropriate boxes.
 - List state and federal dates as applicable. A Programmatic Categorical Exemption/Exclusion Determination meets the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) requirements, therefore both State and Federal dates should be shown. Similarly, show State and Federal dates for a Categorical Exemption/Exclusion.
 - For an Environmental Impact Statement (EIS), give the FHWA EIS Number and Record of Decision.
 - Verify that the project plans and specifications incorporate all action and steps necessary to ensure compliance and commitments included in the environmental document.
 - Federal Regulations (23.U.S.C. 771.129(c)) require that prior to federal authorization to proceed (FNM-76) with the construction phase of the project, the District must establish whether or not the approved environmental document (DEIS, FEIS, or FONSI) or Categorical Exclusion designation remains valid. If FHWA is providing oversight ("Non-Exempt") on the project, verbal consultation with the FHWA TE is required. The outcome of the District determination shall be documented in Attachment "A".
 - FHWA formal reevaluation is required for any EIS NEPA clearance over three years old.
 - Give the FHWA approval date if a EIS reevaluation is required.
-

Environmental Mitigation

If mitigation work is required that is not part of the PS&E, but which must be done before construction, give the completion date, or target date for completion of environmental mitigation work.

Public Interest Findings

For Federal Aid Projects, verify the applicable Public Interest Findings.

See Appendix 2M for Public Interest Finding Form.

Innovative contracting techniques include any project with acceleration clause(s), incentive/disincentive provisions, A+B bidding, lane rental, and so on.

Design FeaturesExperimental or Research Design Features

Indicate whether experimental or research features are involved. If research is to be performed to compare new materials or processes, provide a brief description of the nature of the work to be performed. Give the name and title of the person granting approval of use of the experimental features and the date of such approval. For Federal Aid Projects, a Construction Evaluated Project work plan is to be submitted to the State Project Development Procedures and Quality Improvement Branch for FHWA approval prior to PS&E submittal. Indicate the date of FHWA approval of the work plan on the Attachment A.

Salvageable and Salvaged Materials

Indicate that salvaged and reusable materials have been utilized to the greatest extent possible on the project. If salvageable materials have not been used, provide an appropriate explanation for this action.

As projects are being planned and designed, the District is to consider removing and reinstalling existing hardware on the current project or salvaging items for use on future projects or by maintenance for repair purposes. Examples of items to be considered for salvaging include:

- guard rail and median barrier rail elements, including posts and channel rail elements
- certain types of bridge railing
- lighting standards
- traffic signal facilities
- pipe culverts
- sign structures and sign panels
- railroad rails and ties

- fencing
- frames and grates

The District should also consider reusing materials milled from existing asphalt pavement and recycling existing asphalt pavement.

The District Materials Operations Recycle Coordinator keeps a District and Statewide computer inventory listing of available items. The District should examine this listing before specifying new materials for the project.

Deviations from Standards and Policy

Indicate deviations from standards or policy by checking the appropriate boxes.

One of the basic reasons for ES-OE review of a PS&E Submittal is to ensure uniformity of contract documents and construction practices. The District must explain and fully justify any deviations from standards and policy. An explanation for deviations from standards and policy is necessary to provide documentation for future reference.

CADD Generated Plan Sheets

When the plans portion of the PS&E Submittal contains CADD generated plan sheets which are not submitted electronically but are submitted as hard copy originals, include justification for such actions with the PS&E submittal.

Incentive/Disincentive Payments

When the project contains Incentive/Disincentive (I/D) Payments, include justification for such actions with the PS&E submittal. I/D provisions are often used in conjunction with A+B Bidding.

District Directors responsible for project delivery are to approve the use of Incentive/Disincentive provisions by following conceptual guidelines specifically developed and approved for the use of such provisions. These guidelines can be found on the California Department of Transportation website under "Project Development Procedures Manual Bulletins" (<http://www.dot.ca.gov/hq/oppd/pdpmb/pdpmbidx.htm>). Choose the bulletin "Delegation of Authority for Use of A+B Bidding and Incentive/Disincentive Provisions" dated June 12, 2000.

Incentive/disincentive payments or deductions are not the same as liquidated damages. Liquidated Damages is the amount of money per day to be deducted from the contract price to cover additional state costs due to the contractor's failure to complete the contract within the specified time.

Design Review

The Project Manager must review the project plans to verify that Project Report, Design Exception Fact Sheet, or Project Scope Summary Report commitments relating to design features, such as guardrail upgrading, have been incorporated into the PS&E. Check the box that indicates one of the following:

- The Project Manager has reviewed the plans and verified that design feature commitments have been incorporated into the PS&E, or
- The commitments have not been incorporated into the PS&E. In this case, reference the appropriate file documentation (for example, memo to file or fact sheet) which contains the reasons for not incorporating them.

When the project contains design exceptions, the file documentation must contain the dates on which FHWA (where full FHWA oversight is required, coded as "N" in the "E" or "N" Stewardship Classification) and Design and Local Programs approved those design exceptions. The approved Design Exception Fact Sheet (and/or any other related documentation) must be included in the Project History File.

If the project is not eligible for federal funding indicate reason why.

If the project is eligible for federal funding, indicate whether the project is ("E") Exempt from Federal review and oversight or ("N") requires full Federal review and oversight. See Appendix 2I for determination of FHWA oversight. The document shall contain the name of the FHWA Transportation Engineer who made the determination and the date such determination was made.

If Emergency Relief is applicable, list approved Damage Assessment Form Numbers.

If the project is eligible for federal funding, the Project Manager is to certify that the project contains the appropriate applicable design requirements by checking one of the three statements listed below (reference page 2-12):

All applicable design Standards for this project have been met or exceeded in accordance with:

- 1) Title 23 USC, Section 109
- 2) Title 23 USC, Section 109, except for the described design exceptions listed in the "Project Design Exceptions" ATTACHMENT INCLUDED WITH THIS SUBMITTAL.
- 3) the corrective strategy selected responds directly to the identified/potential problem and this project does not impact the existing 13 controlling Design/Geometric Standards; therefore they are not addressed.

The above Statement No. 3 is to be used on those occasions when projects are developed to correct a specific problem such as open graded asphalt concrete overlay to solve a skidding problem, construction of a sound wall along the right of way line, or repair of a slope, and the 13 controlling geometric criteria are not considered and are beyond the reasonable scope of the project. **The above Statement No. 3 is to be used only upon approval from the Design and Local Programs Project Development Coordinator.**

The design standards referred to in Title 23 USC, Section 109 are outlined below and have been approved by FHWA.

For projects on the National Highway System (NHS) including the Interstate System:

- Limited access multilane projects - All work meets or exceeds AASHTO geometric design standards.

(Note: Caltrans Highway Design Manual has been approved for use in California by FHWA.)

- Other projects - Meet the Geometric Design Criteria for 3R projects dated 12/29/95. (Design Information Bulletin # 79).

For non-NHS projects:

- 3R (except two lane roads) – reconstruction and construction design standards shall be met and indicated in the State Highway Design Manual.
- 3R – on two lane highways only design standards shall be met as indicated in the Geometric Design Criteria for 3R projects dated 12/29/95. (Design Information Bulletin # 79).

Design exceptions to this criteria are to be listed in a "Project Design Exceptions" attachment which is to be included in the PS&E submittal. Provide a description of the design exception, who approved the exception and the date approved.

Constructibility Review

The project plans and special provisions shall be reviewed for constructibility prior to PS&E Submittal.

NHS/Value Analysis Study

This concerns federally funded projects, on the National Highway System, with a combined (construction, right of way and engineering costs) cost estimate of \$25 million or more. Note that "project" is defined as a portion of highway as described in an applicable environmental document and may include several contracts.

Indicate whether or not your project fits the above description. If it does, provide date of the value analysis (VA) study performed resulting in approved recommendations incorporated into the projects PS&E documents. Provide a summary of VA study recommendations implemented in the project and the resulting savings. If the VA study is incomplete, provide an explanation.

HOV Lane Report

Where High Occupancy Vehicle (HOV) lanes are proposed, give the completion date, or target date for completion of the HOV Lane Safety, Congestion, and Highway Capacity Estimate Report. This report is not required when adding HOV bypass lanes to ramps.

Hazardous Waste Clearance

Indicate if there is hazardous waste on the project. If hazardous waste is present within the project limits that must be removed or processed prior to start of construction, give clearance date. If the project has not been cleared, give the target date for clearance.

Advanced approval from the Regional or District Director, with concurrence by the district division chief of construction, must be obtained if the construction contractor is to move, remove or process hazardous waste under the contract. Give the approval date.

Aerial Deposited Lead

Indicate whether or not aerial deposited lead is present or suspected. If it is,

- indicate whether or not special provisions incorporating regulatory requirements and/or seismic retrofit exception are included, and

- indicate whether or not the sampling has been completed.

If sampling is not completed,

- indicate estimated sampling completion date and
 - indicate if sampling will be done by the project contractor.
-

"Buy America"

Foreign Material Waiver

Indicate whether or not an appropriate waiver has been obtained from FHWA to preclude Federal "Buy America" requirements.

Permits

Identify all permits required for the project that must be obtained by the Department prior to the start of work. Typical permits would be from the Corps of Engineers, Department of Fish and Game, Coastal Commission, and Water Quality Control Board.

Identify each agency requiring a permit and give the date issued and expiration date. If a permit has not been issued, give the target date for issuance.

Submit a clean, reproducible copy of each permit to ES-OE with the PS&E submittal or immediately after the permit has been executed. Copies of the permits will be included in the informational handout for the project. (Refer to "Informational Handout" elsewhere in this Section 2-3.02.)

Cooperative Agreements for Construction Funds (COOPS)

Indicate whether the project involves cooperative agreements (coops) for construction funds. A cooperative agreement is fully executed when approved by Headquarters Legal Service Center and assigned a four digit State document number.

Identify each agency involved and for each agreement show:

- State document number
- date executed

- effective date
- expiration date
- dollar amount of participation by others.
- Minor B Budget Verification if applicable
- type of local funds (Measure, Local Federal, Other).
- target date for execution if not executed

Under "Explanation", provide information about any agreement that is not fully executed: list the District or local agency identification number and local agency approval date.

Submit a clean reproducible copy of each fully executed agreement to ES-OE with the PS&E submittal or immediately after the agreement has been executed.

Other Agreements

Indicate whether other agreements are involved. Typical agreements would be with the PUC, transit companies, local agencies for bus loading facilities and interagency agreements.

If other agreements are involved, identify the agency involved and show document number, execution date, expiration date, and dollar amount of participation by others for each agreement. If an agreement has not been executed, explain why and give the target date for full execution.

Submit a copy of each fully executed agreement to ES-OE with the PS&E submittal or immediately after the agreement has been executed.

Informational Handout

Identify all information for the project that is to be made available as a handout to prospective bidders (such as water source information, materials information, copies of permits, geology reports, etc.) Indicate the date the information was submitted to ES-OE and list items involved. If the materials for the information handout have not been sent, list target date for submittal. Although copies of permits are part of the informational handout, the permits should not be listed again under informational handout section of Attachment A.

The materials to be included in the information handout specify restrictions and requirements or provide additional information necessary for contractors to bid the work. These documents must be reproducible and legible.

ES-OE will reproduce the information handout material and make copies available to prospective bidders upon request in the same manner that it furnishes plans and other contract documents. Documents to be provided in the information handout includes:

Water source information handout

If a project will require significant amounts of water and is in an area under drought conditions or subject to water shortages, a water source information handout is to be provided to help prospective bidders locate possible water sources. Submit to ES-OE reproducible copies of correspondence and other documentation for all arrangements, whether formal or informal, that have been made to secure water needed for the project. (Refer to "Availability of Water for Project" in this Section 2-3.03.)

Materials information

All test data applicable to material sites for a project are to be furnished to prospective bidders in the form of a "Materials Information" handout. Generally, the materials information should include:

- a cover page with project identification information
- an index of accompanying information
- listings of investigated material and disposal sites
- maps of sites
- test report data
- foundation recommendations and foundation reviews
- copies of agreements with owners (if applicable)
- copies of use permits and clearances (when they have been obtained by the State)

Detailed information regarding the contents of the "Materials Information" handout is included in Topic 111 of the Highway Design Manual. Submit reproducible copies of all materials included in the "Materials Information" handout with the PS&E.

Permits

If permits are required for the project, copies of the permits are to be made available to prospective bidders. Submit reproducible copies of the permits to ES-OE.

Typically, permits may be required from the following agencies:

- Department of Fish and Game
 - California Regional Water Quality Control Board
 - Corps of Engineers
 - Coastal Commission
 - Coast Guard
 - State Lands Commission
 - The Reclamation Board
 - Water districts
 - Bay Conservation and Development Commission
 - Tahoe Regional Planning Agency
 - Transit districts
 - U.S. Forest Service
 - Indian Reservation Ordinances
-

Availability of Water for Project

This section considers water use for any portion of construction except landscape irrigation. For projects that include landscape irrigation, see instructions under "Availability of Water for Landscape Irrigation Use". Indicate whether nonpotable or potable water for project construction is or is not available by marking the applicable statement under the heading, "Availability of Water for Project Construction."

Determine if nonpotable water (e.g., reclaimed water, captured water) is available, and is consistent with quality and health standards, for highway construction. If nonpotable water is available, include a water source information handout with PS&E submittal. If nonpotable water is not available, determine availability of potable water sources for project construction.

Where the construction project is within an area under drought conditions or subject to water shortages, significant amounts of water will be required for the project, and potable water is available, include a copy of the water allocation letter(s) with the PS&E submittal. If water allocation commitments cannot be obtained, include copies of the letters identifying the water sources with the PS&E submittal. Copies of the water source information will be included in the informational handout for the project. (Refer to "Informational Handout" elsewhere in this Section 2-3.03.)

The District is responsible for confirming the availability of nonpotable or potable water.

AVAILABILITY OF WATER

If	Then
Nonpotable water is available for project construction.	Include a water information handout with the PS&E submittal.
Nonpotable water is not available for project construction.	Determine if potable water is available in sufficient quantities

If the project is within an area under drought conditions or subject to water shortages and significant amounts of water are required.

And	Then
Nonpotable water is not available for project construction but a quantity allocation of potable water to meet the needs of the project during construction has been obtained or is being obtained.	List the provider and the allocation document date or target date. Include a copy of the water allocation letter(s) with the PS&E submittal.
Or	
Sufficient quantities of potable water are available for project construction but firm water allocation commitments cannot be obtained.	Include copies of the letters identifying the water sources with the PS&E submittal.

Availability of Water for Landscape Irrigation Use

Indicate if water availability is NOT an issue for the reasons indicated for landscape irrigation use. If water availability IS an issue, indicate whether potable or nonpotable will be used. Indicate if copies of local support and water availability letters are included in the PS&E submittal. If documentation letters are not included provide target date for submittal.

Construction Window and Other Constraints

Indicate whether a construction window will influence the recommended advertising date. If a construction window is involved, list the beginning and ending dates (month and day) when construction can occur. Give a brief explanation of the constraints.

Indicate whether the entire project is affected by the constraints or just a portion of the work.

Other Project Constraints

Indicate whether the project involves other constraints, such as environmental constraints or Department of Fish and Game constraints. If so, identify and give clearance date or expiration date of each constraint. Give a brief explanation of the constraint and explain why it has not been cleared.

Recommended Advertising Date

The District is to recommend a realistic advertising date consistent with required processing times (see Section 1, Table 1-5). The recommended advertising date should consider construction constraints, coordination with adjacent projects, public relations, financing, status of permits and agreements, right of way certification, and district staffing requirements. When applicable, also consider the time required to schedule a CTC vote after the project is RTL.

Programming Document Reference

Indicate the programming document and programmed year. The currently identified programming documents are:

- STIP - State Transportation Improvement Program
- SHOPP - State Highway Operation and Protection Program

If the project is included in one of these programs, a programmed year will be associated with the first year of construction.

In addition, other approved projects may be covered by the following categories:

- Minor Program
- Maintenance Program
- Measure projects
- Local Federal (CMAQ, RSTP, etc.)
- Other locally funded projects
- TCI (transit projects).

Measure and other locally funded projects are not included in any of the state programming documents. They are included in the List of 100% Locally Funded Projects submitted to the CTC for information, however, approval is obtained through the execution of a Cooperative Agreement.

If federal funds are involved, either state or local, the project must be in an approved Federal Programming document before it can be advertised. The mandatory information, as outlined in Appendix 2B, is required. Indicate whether or not the project is included in the current Federal STIP. If yes, provide either the current "adopted" FTIP/FSTIP information, or the "approved" FTIP/FSTIP amendment information, whichever is applicable. If appropriate, indicate the Metropolitan Planning Organization (MPO) that prepared the document. If no, provide the target FTIP/FSTIP amendment information.

Funding Information

Check the appropriate boxes to indicate whether funds have been voted or not voted, or if a CTC vote is required. If a CTC vote is required, show date and dollar amount of the vote or request.

A copy of the funds request must be submitted with the PS&E submittal. At the same time, a copy of the funds request is to be sent to the Budgets Program.

Indicate whether maintenance funds are involved. If they are, show the verification date and amount of maintenance funds. A completed Budget Verification of Maintenance Funds form (Appendix 2C) must be submitted with the PS&E package.

2-3.04 REGISTERED ENGINEER'S SIGNATURE AND SEAL SHEET

Submit Signature and Seal sheets for the special provisions under separate cover. These sheets, as shown in Appendix 2G, have four elements:

- the contract number.
- a Design Oversight Approval block (to be completed if any portion of the project specifications have been prepared by a consultant or local agency and the signature and seal are included).
- the statement "The Special Provisions contained herein have been prepared by or under the direction of the following Registered Persons".
- places for signatures and seals for each professional discipline involved in the project.

The Design Oversight Approval block is to be used when the project or any portion of the project specifications have been developed by a private consultant or local agency. The block must bear the printed name, signature, professional registration number and approval date of the lowest level licensed Caltrans person providing design oversight for the entire project.

The signature and seal lines must bear the signature, registration seal, license number and expiration date of the lowest level licensed person knowledgeable about and in responsible charge of the specific work for each professional discipline involved in the project. See Appendix 2G. Professional disciplines may be:

- highway
- traffic
- landscape
- electrical (highway)
- electrical (structures)
- structures
- mechanical
- architectural.

Professional engineers may sign for work in areas where they are not fully competent if the work was done by a competent person.

If ES-Division of Structures prepares a portion of a project's special provisions, they shall submit a completed signature and seal sheet to the District with their proposed final project special provisions. The DOE will combine the project special provisions and submit both the Division of Structures and District signature and seal sheets to ES-OE with the PS&E.

2-4 INFORMAL BID PROJECTS

When an emergency exists, the time required to process projects from receipt of the PS&E in ES-OE to the start of work can be accelerated through an informal bids process. With this process, some of the provisions of the State Contract Act are waived which allows the Department to advertise and award contracts faster.

Informal bid projects must meet the conditions of Section 10122 of the State Contract Act. Projects processed for informal bids require a Director's Order, which is obtained with a Director's Order Request. The District is to notify ES-OE to discuss the tentative project schedule as soon as it is apparent that an informal bid project is to be submitted to ES-OE for processing. The project schedule includes the following information to be used for the Director's Order Request:

- PS&E submittal date.
- Advertising Date.
- Bid Opening Date.
- Award Date.
- Start of Work Date.
- Number of Working Days.

ES-OE will determine tentative advertisement, bid opening, and award dates based on the criticality of the project. Advertisement periods may be scheduled for as short as a few days or as long as two weeks. Award of the contract may take from one to seven days, depending on need.

If the project is eligible for federal funding, a draft copy of the Director's Order Request is to be sent to the Budgets Program, Office of Federal Resources. Also, attach to the draft copy of the Director's Order Request, a memorandum requesting preparation of a Public Interest Statement with a brief justification for inclusion in the Public Interest Statement.

Damage Assessment Form

When a FHWA Damage Assessment Form (DAF) for the Emergency Relief Program is prepared for the project, the PS&E must be consistent with the scope of the work identified in the DAF. If there are substantial differences between the PS&E and the DAF, either in scope or in cost, the District should prepare a revised DAF. When federal funds are involved, FHWA must concur with the revised DAF.

The Major Damage Restoration Coordinator's Handbook contains additional information about DAFs.

Delivery of Submittals

PS&Es are to be processed through the DOE units. PS&E submittals to ES-OE should be sent electronically or hand-delivered rather than mailed.

As soon as an estimate is available, the DOE is to fax a copy of the estimate to ES-OE to allow sufficient time to set DBE or DVBE goals for the project. This can occur prior to PS&E submittal.

If the project includes structures work, the District's PS&E submittal must include DOE/ES-DSD combined specifications and estimate. When a combined PS&E is to be sent electronically or hand-delivered to ES-OE, DSD's original plans and prints are sent by DSD.

Submittals

Project plan delineation need not meet the same quality standards expected for a typical project. Hand drawn plans have been successfully used, but project plans developed on CADD are recommended whenever possible. PS&E quality for emergency projects should only be sacrificed in the interest of saving time. However, the District is still to submit PS&Es which, when used together, present the proposed work in a biddable and buildable manner. Plans must be legible when reduced in size by 50 percent.

Emergency projects generally require super-expedited processing. In addition to the normal PS&E documents and material described in Section 2-2, the District must submit the following information to ES-OE to expedite review and preparation of contract documents for informal bid projects:

- Identify submittal as Informal Bid Project on the cover page of the PS&E submittal.

- When PS&E is hand-delivered, provide a PS&E CADD Submittal Form and two sets of project plan prints. DSD will also provide a PS&E CADD Submittal Form and two prints of DSD plans, when applicable.
 - A copy of the Director's Order or copy of Director's Order Request.
 - If a pre-bid meeting is to be held, include the time, date, and location for the meeting (pre-bid meetings are not recommended for short advertising periods).
 - Identify the need for calendar or non-standard working days.
 - Identify the need for non-standard work shifts, such as multiple work shifts (that is, double shift).
 - Provide calculations to justify higher than standard liquidated damages.
 - A Public Interest Finding (PIF)* Statement (See Appendix 2M) with Letters of Justification for: less than three week-advertisement; use of force account (day labor); use of publicly owned equipment; use of State-furnished materials; mandatory use of borrow/disposal sites; use of patented and proprietary materials; waiver of Buy America provisions; and/or acceleration techniques added by contract change order.
 - Proposed incentive/disincentive clauses must be supported by quantified user savings to the public (Refer to Section 2-3.03). Recommend a daily maximum and a project total. Include a copy of the incentive/disincentive calculations with the submittal. Deputy Director, Project Development approval is required for the use of Incentive/Disincentive clauses, if "A+B" bidding is requested.
- * Contact Budgets Program, Office of Federal Resources for assistance in the preparation of Public Interest Findings for federally-funded projects. In the PS&E submittal, identify the FHWA Transportation Engineer that provided the approval.

All project constraints identified in Attachment "A" should be cleared before advertisement. The following items must be submitted with the PS&E if at all possible:

- a copy of all executed permits and agreements
- a copy of the right of way certification memorandum
- railroad clauses
- materials information handout

As with normal PS&E submittals, it is the District's responsibility to make the appropriate distribution of PS&E.

Advertisement

Some emergency projects are issued exemptions from State and local permits by an executive order from the Governor. Other selected emergency projects may require contract restraints to be allowed to clear prior to bid opening and be advertised on a "risk" basis - without all required documentation delivered to ES-OE. Typically it is the goal to advertise emergency projects one week after PS&E delivery to ES-OE. Projects will not normally be advertised until the following has occurred:

- Receipt of all District responses.
- Execution of all permits, agreements, and the right of way certification.
- Receipt of materials information.
- Receipt of FHWA approvals to include the FNM-76 for permanent restoration work on "N" full oversight projects. An FNM-76 is required for all Federally funded projects, even if the project is classified as exempt ("E"). The FNM-76 must be dated no later than the advertisement date or Federal funding may be forfeited.

A Director's Order and Funds Requests must be processed by the District and sent to Headquarters as early as possible. Regardless of when the project is ready for advertising, projects cannot be advertised prior to execution of the Director's Order nor prior to funds being allocated for the project.

Limited time is available for contractors to become aware of an informal bid project, obtain bid documents, and develop responsible bids. The District is to contact interested contractors capable of performing the type of work involved and provide ES-OE with a list of 7 to 10 contractors who will be provided a bid package prior to the advertising date. The list is to include:

- Name and phone number of contractor's contact person.
- Contractor's mailing address (P.O. Box not acceptable).
- Contractor's FAX number for receiving addenda.

Typically, on all but the most accelerated informal contracts, bid packages will only be made available in Sacramento. Contractors may request that the bid packages be mailed to them, free of charge, by over-night mail.

If the bid packages are distributed by the district, it is critical that the district keep a complete and accurate record of all contractors who received bid packages and make this record available to ES-OE. If it becomes necessary to issue an addendum, ES-OE must provide a copy of the addendum to all contractors who received bid packages, or it may be necessary to reject all bids and readvertise the project - even in an emergency.

On the most accelerated informal projects, the district must deliver bid packages (prepared by ES-OE) directly to interested prime contractors, where available, or make arrangements in advance for the contractors to pick up the bid documents in the District Office or Headquarters. When applicable, the District is to provide bidders with a list of DBE subcontractors.

Processing

ES-OE gives informal bid projects the highest priority. If necessary, ES-OE will suspend work on other projects that would delay or interfere with the progress of informal bid projects. In order to meet the negotiated target dates imposed for the expedited schedule, District and DSD personnel must make the same commitment. It is imperative that District and DSD project engineers, specification engineers, and other appropriate staff members be available to respond in an expeditious manner to ES-OE queries - including evenings, weekends, and holidays unless arrangements are made to the contrary.

The processing time from receipt of PS&E in ES-OE to start of contract work for informal bid projects is typically 2 to 4 weeks.

APPENDIX 2A (Continued)

Office Engineer

Page 2

EA:

Working Days: _____ (Do Not Include Plant or Water Pollution Control Establishment Days)

Plant Establishment Type: _____

Plant Establishment Period: _____ Days

Number of Contract Items: _____ Liquidated Damages: _____

Total number of Plan Sheets Submitted by District Electronically (CADD): _____

Total number of Hand Drawn Plan Sheets Submitted by District with PS&E Package: _____ } Total Plans = _____

Cross sections for this project will be made available in the District:

X1= Prints Only X2= Electronic Only X3= Prints and Electronic**Bidder Inquiries to be submitted on "Bidder Inquiry" forms**☐ Yes ☐ No Duty Senior fax: _____**PS&E prepared/completed by other than Caltrans, e.g. Consultant:**

Name of firm: _____

Project Engineer: _____

Involved District/Structures personnel:

Telephone No.: _____

District Project Engineer or Oversight Engineer: _____

CALNET No: _____

Plans reviewed and approved for Drafting Standards: _____

CALNET No: _____

District Reviewer Roadway: _____

CALNET No: _____

Electrical: _____

CALNET No: _____

Landscape: _____

CALNET No: _____

Division of Str Design Project Engineer: _____

CALNET No: _____

Division of Str Design Specification Engineer: _____

CALNET No: _____

District Final Pay Quantities verified by: _____

CALNET No: _____

Division of Str Design Final Pay Quantities verified by: _____

CALNET No: _____

District Office Engineer: _____

CALNET No: _____

Project Manager - Name: _____ INITIALS: _____

CALNET No: _____

Innovative/Unique Features []

Justification/

Approval
DateTarget
Date☐ Expedite☐ Informal☐ A+B☐ Incentive/Disincentive☐ QC/QA☐ Escrow☐ Pre-Award☐ FSC☐ Prebid Meeting☐ TERO☐ Tiger Team☐ Warranty☐ YellowPaint/Thermo Removal

APPENDIX 2A (Continued)

Office Engineer
Page 3

EA:

		Signature Required			
_____	Roadway	<input type="radio"/> Qualified	<input type="radio"/> For Qualification	<input type="radio"/> Consistency Review	<input type="radio"/> None
(Signature)					
_____	Electrical	<input type="radio"/> Qualified	<input type="radio"/> For Qualification	<input type="radio"/> Consistency Review	<input type="radio"/> None
(Signature)					
_____	Landscape	<input type="radio"/> Qualified	<input type="radio"/> For Qualification	<input type="radio"/> Consistency Review	<input type="radio"/> None
(Signature)					
<input type="radio"/> Yes	<input type="radio"/> No	This project has changes to the special provisions which are deviations from standards or policy. (i.e. unapproved edits)			
<input type="radio"/> Yes	<input type="radio"/> No	This project has new special provisions requiring the respective Program approval. If YES, Approval date: _____ If NO, Target Date: _____			

The information contained in this memorandum and the attached information, including "Ready to List for Advertisement" memo (Attachment "A"), is submitted for use in preparing this project for advertising.

Signed

Name

Title

APPENDIX 2A (Continued)

Office Engineer
Page 4**PS&E DISTRIBUTION**
Send When Appropriate

EA:

ADDRESSEE	WHEN	PORTION
<input type="radio"/> District Project Manager	ALL PROJECTS	Cover Memo and Attachment A
<input type="radio"/> Engineering Service Center Division of Office Engineer (MS 43)	ALL PROJECTS	Email or fax information to OE staff using specific telephone number.
<input type="radio"/> Engineering Service Center Structures	If Structures or Buildings involved	Full PS&E package with project plans
<input type="radio"/> Engineering Service Center Earthquake Engineering & Design Support, Railroad Agrmts Section	If Railroad within project limits	PS&E package without Special Provisions
<input type="radio"/> Design and Local Programs Office of Local Programs, Project Implementation	If Measure or Local funding involved	Cover Memo, Attachment A and if all funding is Measure/Local etc. one copy of each Cooperative Agreement
<input type="radio"/> Design and Local Programs Office of State Landscape Architecture	If project has more than \$110,000 of Highway Planting work	Full PS&E package with project plans including water letters, Design Intent Statement and Fact Sheet
<input type="radio"/> Maintenance Program	If HM funding involved	Full PS&E package with project plans
<input type="radio"/> Traffic Operations Program	If HB 1 Program	PS&E package without Special Provisions
<input type="radio"/> Traffic Operations Program, Toll Bridge Operations Branch	If Toll Bridge (TBF) funding involved	PS&E package without Special Provisions
<input type="radio"/> Budgets Program, Office of Federal Resources (MS 23)	ALL PROJECTS except Maintenance (HM program)	<p>... Cover Memorandum & Attachment A ... RW certification ... NEPA Environmental certification ... Funds Request Letter ... Location map ... Engineer's Estimate (segregated BEES)</p> <p>Check applicable items and submit:</p> <ul style="list-style-type: none"> <input type="checkbox"/> R/R Service Contract agreement <input type="checkbox"/> Design Exception & Fact sheet <input type="checkbox"/> Cooperative Agreement <input type="checkbox"/> Director's Order <input type="checkbox"/> Damage Assessment Form (DAF) <input type="checkbox"/> Letter of Justification for Public Interest Finding (PIF) statement <p>Important: Documents NOT submitted in this original package are to be sent by District Office Engineers to Federal Resources as soon as they are available. Projects will NOT be advertised until all documents are submitted and Federal Authorization has been obtained.</p>

APPENDIX 2B (Attachment A)

Page 1

ATTACHMENT "A"

State of California

Business, Transportation and Housing Agency

Memorandum

To : Office Engineer

Date :

File :

Attn: Scheduling Engineer,
MS 43From : **DEPARTMENT OF TRANSPORTATION**

Responsible Unit :

Responsible District :

Preliminary Engineering EA:

Secondary/Combined EA:

PPNO:

Metric:

PlanYr: _____

Subject: Project Status for Ready to List for Advertisement

This is a - -

Title:

Right of Way**Actual Certification**

Certification No: _____

Certification Date: _____

Target Certification

Certification Target No: _____

Certification Target Date: _____

Explanation for Certification No. 3:

Railroad Clearance []

Clearance Date: _____ Target Date: _____

Railroad Company: _____

Construction & Maintenance

Agreement No./Service Contract No.: _____ Cost Estimate: _____

Environmental Status

	<u>State Date</u>	<u>Federal Date</u>	<u>Record of Decision:</u>	<u>Federal No:</u>
<input type="radio"/> Programmatic Categorical Exemption/Exclusion:	_____	_____	-----	----
<input type="radio"/> Categorical Exemption/Exclusion:	_____	_____	-----	----
<input type="radio"/> Negative Declaration/Finding of No Significant Impact:	_____	_____	-----	----
<input type="radio"/> Final Environmental Impact Report/Statement:	_____	_____	_____	_____

☐ Environmental commitments are included in the project plans and specifications.☐ The project Environmental Impact Statement was subject to an FHWA environmental reevaluation and was approved on: _____☐ Environmental Validation☐ "Exempt" Project (See Design Review, Part B below):

In accordance with the provisions of 23 CFR 771.129(c), the District has established that the current approved NEPA environmental document or Categorical Exclusion designation remains valid for the pending request for construction authorization.

☐ "Non-Exempt" Project (See Design Review, Part B below):

In accordance with the provisions of 23 CFR 771.129(c), the District has consulted with FHWA and has established that the current approved NEPA environmental document or Categorical Exclusion designation remains valid for the pending request for construction authorization.

Name of FHWA Transportation Engineer Consulted: _____

Date of Consultation: _____ (Must be within 12 months of PS & E submittal.)

APPENDIX 2B (Continued)

Office Engineer

Page 2

EA:

Environmental Mitigation Affecting Advertising []

Completed Date: _____ Target Date: _____

Explanation if incomplete:

.....

.....

.....

.....

Experimental or Research Features []

Description of experimental or research work:

.....

.....

.....

Experimental features were approved by _____

on _____

☐ Work plan submitted and approved by FHWA (Federal Aid Projects Only). Date approved: _____
Public Interest Findings for Federal Aid Projects (Check appropriate box if applicable)

This project specifies:

Cooperative agreement specifies:

- | | |
|---|---|
| <input type="checkbox"/> An advertising period of less than 3 weeks | <input type="checkbox"/> Use of agency-furnished materials |
| <input type="checkbox"/> State-furnished materials not approved by the FHWA | <input type="checkbox"/> Use of patented/proprietary materials (as agency-furnished) |
| <input type="checkbox"/> Convict-produced materials (as State-furnished) | <input type="checkbox"/> Waiver of Buy America (for agency-procured materials) |
| <input type="checkbox"/> Mandatory borrow/disposal sites | <input type="checkbox"/> Use of force account as incidental to the work (budgeted under supplemental funds) |
| <input type="checkbox"/> Use of patented/proprietary materials | |
| <input type="checkbox"/> "Innovative contracting techniques" | |

Salvageable Materials

- ☐
- Maximum utilization of salvageable materials has been incorporated in this project.
-
- Reason why salvaged materials were not utilized:

.....

.....

Deviations from Standards and Policy (Check appropriate box, if applicable)

- ☐
- This project contains CADD generated plan sheets which are not submitted electronically. Justification for this deviation from policy is included with this submittal.
-
- ☐
- This project contains incentive/disincentive payments for early contract completion. Justification for incentive/disincentive payments is included with this submittal.

Design Review**A. Check One of the following Statements For All Projects**

- ☐
- The Project Manager has reviewed the project plans and verifies that the Project Report, Design Exception Fact Sheet, or Project Scope Summary Report commitments pertaining to design features have been incorporated into the PS&E.
-
- ☐
- Project Report, Design Exception Fact Sheet, or Project Scope Summary Report commitments pertaining to design features have not been incorporated into the PS&E. File documentation for not including the commitments in the PS&E is contained in: _____

APPENDIX 2B (Continued)

Office Engineer

Page 3

EA:

B. Complete One of the two following Statements For All Projects

- This project is not eligible for federal funding due to

- ☐ Determination by FHWA Transportation Engineer _____ dated _____
- ☐ Funding by Maintenance (HM) Program
- ☐ Other _____

- This project is eligible for federal funding and has been determined:

- ☐ ("E") Exempt from FHWA review and oversight as indicated in Appendix 2I of the PS & E Guide.
- ☐ ("N") To require full Federal review and oversight under the May 12, 1992 Letters of Agreement executed with FHWA establishing the Stewardship Program.

* IF Emergency Relief (ER), please provide list of approved damage assessment numbers:

C. Check One of the following Statements For All Projects Eligible for Federal Funding

- All applicable design standards for projects eligible for Federal funding have been met or exceeded in accordance with:

- ☐ Title 23 USC, Section 109
- ☐ Title 23 USC, Section 109 except for the described design exceptions listed in the "Project Design Exceptions" **ATTACHMENT INCLUDED WITH THIS SUBMITTAL.**
- ☐ The corrective strategy selected responds directly to the identified/potential problem and this project does not impact the existing 13 controlling Design/Geometric Standards; therefore they are not addressed.

NHS/Value Analysis Study

All federal-aid highway projects on the National Highway System with an estimated cost of \$25,000,000 or greater (construction, right of way and engineering costs) shall have a value analysis (VA) study performed with all resulting, approved recommendations incorporated into the plans, specifications, and estimate. Project and cost are determined by the applicable environmental document and may include several contracts.

Does this project fall under the above guidelines?

Date of VA Study: _____

Explanation if incomplete:

VA recommendations implemented and resulting savings (summary):

HOV Lane Report []

Clearance Date: _____ Target Date: _____

Explanation if incomplete:

Hazardous Waste Clearance Affecting Advertising []

Clearance Date: _____ Expiration Date: _____ Target Date: _____

Explanation if incomplete:

- ☐ Hazardous Waste is to be moved, removed or processed under the construction contract. This has been approved by the Regional or District Director for Transportation Engineering on _____ Date _____.

APPENDIX 2B (Continued)

Office Engineer

Page 4

EA:

Aerial Deposited Lead is present or suspected on this project:

-If YES, special provisions incorporating regulatory requirements and/or seismic retrofit exception are included:

Sampling has been completed:

-If NO, estimated sampling completion date is _____

Sampling will be done by the project contractor:

Buy America/Foreign Material and appropriate waiver, if any:

Americans with Disabilities Act

State and Federal Americans with Disabilities Act requirements have been incorporated into this project.

Permits []

Agency:	Issue Date	Expiration Date	Target Date	If to be part of Information Handout was it submitted w/ PS&E Pkg?	Target Submittal Date

Explanation for permits not approved:

Cooperative Agreements Involving Construction Funds []

(Copy included and copy sent to Office of Federal Resources)

Agency:	Doc. No.	Date Executed	Effect. Date	Expiration Date	Amount	Target Date

Explanation for Coops not executed:

Other Agreements []

Agency:	Doc. No.	Date Executed	Expiration Date	Amount	Target Date

Explanation for agreements not executed:

Other Informational Handouts []

Item:	Date Submitted	Target Submittal Date

APPENDIX 2B (Continued)

Office Engineer
Page 5

EA:

Availability of Water for Project Construction

(Check appropriate boxes)

- ☐ Non potable water sources are available in sufficient quantities and the use of potable will not be required.
(A water source information handout is included with this submittal)
- ☐ Non potable water sources are not available. Potable water is available in sufficient quantities.

Note: If this project is within an area under drought conditions or subject to water shortages and significant amounts of water will be required, check one of the two boxes below, as appropriate.

- ☐ A quantity allocation of potable water to meet the project needs during construction has been obtained from
- Allocation Document Date: _____ Allocation Document Target Date: _____
- ☐ Potable water allocation commitments cannot be obtained. (Copy of letter(s) identifying water sources is included with this submittal.)
- ☐ Neither non potable nor potable water sources can be provided at this time for construction of this project.

Availability of Water for Landscape Irrigation Use

(Copies of all documentation should be sent to Office of Landscape Architecture, Water Management Branch)

- Water availability is **NOT** an issue on this project. Local support and/or water availability letters are not included for the following reason (check one of the three below):
- ☐ Mandatory water rationing is not required by local water agency.
- ☐ Existing water meter(s) will serve the project and there is no net increase in the projected water use for the meter(s) serving this area.
- ☐ Planting will not require the installation of water meters.
- Water availability **IS** an issue and a potable and/or non potable (circle one or both) source is available.
(check one or more below).
- ☐ A copy of the local support letter(s) is included.
- ☐ A copy of the water availability letter(s) is included.
- ☐ A copy of the local support and/or water availability letter(s) is not included (circle one(s) not included).
Target Date for submittal: _____

Construction Window and Other Constraints []

Contractor can start work on or after _____

Contractor must stop work on or before _____

Reason for Construction window: _____

Other Project Constraints []

Constraint: _____

Clearance Date: _____ Expiration Date: _____ Target Date: _____

Describe Constraint: _____

APPENDIX 2B (Continued)

Office Engineer

Page 6

EA:

Recommended Advertising Date

Based upon the information contained in this memorandum, the District recommended Advertising Date is _____

Explanation: _____

Programming Reference

(Use a "I", not a "I-" for Year Programmed)

	<u>Delivery Plan FY</u>	<u>Year Programmed</u>	<u>\$ Amount Programmed</u>
<input type="checkbox"/> STIP	_____	_____	_____
<input type="checkbox"/> SHOPP	_____	_____	_____
<input type="checkbox"/> Other * _____	_____	_____	_____
<input type="checkbox"/> Maintenance	_____	_____	_____
<input type="checkbox"/> Minor A	_____	_____	_____

* Seismic, Minor B, FAU, R/W, TBF or other special funding

If this is a State and Local Transportation Partnership project, it is in Cycle ____.

If federal funds are involved, provide the following MANDATORY information:

Is the project in the current approved Federal STIP? ☐ Yes ☐ No

If YES, provide one of the following:

* The current adopted FTIP/FSTIP information (For Non-MPO Rural counties, use "Rural" for MPO):

MPO _____ FTIP / FSTIP cycle _____ FY programmed _____ Federal Approval Date _____

* The approved FTIP / FSTIP Amendment information (if applicable):

FTIP/FSTIP amendment number _____ and amendment Federal approval date _____

If NO, provide the following target information:

Proposed FTIP/FSTIP amendment number _____ and amendment target MPO approval date _____

Funding Information

(check appropriate button)

<input type="checkbox"/> Funds Voted*	Date Voted _____	Amount _____
<input type="checkbox"/> Not Voted*	Funds Request Date _____	Amount _____
<input type="checkbox"/> Maintenance**	Verification Date _____	Amount _____
<input type="checkbox"/> Minor B	Verification Date _____	Amount _____
<input type="checkbox"/> CTC Vote Not Required		
<input type="checkbox"/> Funds from another EA (list in Notes)	G12 Date _____	Amount _____

Is this project CMAQ eligible? ☐ Yes ☐ No

(If "YES", you must have an emission reduction study.)

If local federal funds are involved, the "Authorization to Proceed FNM-76" was or will be transmitted to the HQ Local Assistance Program on _____.

General Funding Notes:

APPENDIX 2B (Continued)

Office Engineer
Page 7

EA:

Recommended By:

* A copy of the Request for Funds is to be attached.
** Attach "Budget Verification Form".

Project Manager

Signed _____

Additional Notes:

APPENDIX 2C (Budget Verification of Highway Maintenance Funds Form)

BUDGET VERIFICATION
OF
HIGHWAY MAINTENANCE FUNDS
(Program 20.80)

DISTRICT: _____

EXPENDITURE AUTHORIZATION: _____

COUNTY: _____

ROUTE: _____

KILOMETER POST: _____

PROJECT
TITLE: _____

WORK TYPE: _____

ESTIMATE OF COST: _____

FISCAL YEAR(S): _____

REMARKS: Split funding: \$ _____ in FY _____ and \$ _____ in FY _____ .
Dollar Job: \$1 in FY _____ and \$ _____ in FY _____ .

SIGNATURE (District Maintenance Engineer) DATE

District Maintenance Funds have been allocated for this project:

SIGNATURE (District Resources Manager) DATE

SIGNATURE (Maintenance Budgets Resource Manager) DATE

**BUDGET VERIFICATION
OF
MINOR B FUNDS**
(Program 20.)

DISTRICT: ____

EXPENDITURE AUTHORIZATION: _____

COUNTY: _____

ROUTE: _____

KILOMETER POST: _____

ESTIMATE OF COST: _____

FUNDS ALLOCATED: _____

FISCAL YEAR(S): _____

REMARKS:

Project Manager

SIGNATURE

DATE

District MINOR B Funds have been allocated for this project:
Program Manager

SIGNATURE

DATE

APPENDIX 2D (Federal Construction Type Code for Structures)

The Federal Construction Type Code consists of four digits. The first digit is a (code X) and the remaining three digits are numeric.

The second digit indicates nature of the structure;

- X0 - - Highway over waterway
- X1 - - Highway over railroad
- X2 - - Highway over highway
- X3 - - Highway over waterway and railroad
- X4 - - Highway over waterway and highway
- X5 - - Highway over railroad and highway
- X6 - - Highway under railroad
- X7 - - Highway under highway
- X8 - - Highway under railroad and highway
- X9 - - Other combinations, including highway over waterway, railroad and highway, three and four level grade separations, and miscellaneous

The third digit identifies the material of principal supporting members of the span;

- X - 0 - Timber
- X - 1 - Masonry
- X - 2 - Concrete, not prestressed
- X - 3 - Steel
- X - 4 - Steel and concrete
- X - 5 - Timber and steel
- X - 6 - Timber and concrete
- X - 7 - Composite steel and concrete
- X - 8 - Concrete, prestressed
- X - 9 - Aluminum

The fourth digit identifies type of span (If bridge is comprised of 2 or more span types, identify the predominant type of span) ;

- X - - 0 Slab
- X - - 1 Girder
- X - - 2 Truss (except cantilever)
- X - - 3 Rigid frame
- X - - 4 Arch
- X - - 5 Cantilever truss
- X - - 6 Movable
- X - - 7 Suspension
- X - - 8 Box culvert (bride length)
- X999 Highway tunnel

APPENDIX 2E (Standard Type of Work Descriptions)

"Type of Work" is a concise description representing the majority of the work. This table lists the work descriptions most commonly used and should be used when possible. Where necessary, two descriptions may be combined (example, type of work could be Channelize and Modify Gore). Appendix 2E-1 lists alternate modifiers most commonly used with those identifiers marked by an asterisk (example, type of work could be Repair Storage Building, Modify Building or just Building).

Asphalt Concrete Surfacing	Ramp *
Bridge Railing *	Ramp Metering System
Bridge *	Realign Curve
Building*	Realignment
Channelize	Rehabilitate Bridge Deck
Clean and Paint Bridge	Rehabilitate Pavement
Clean and Paint Sign Structure	Repair Slope
Concrete Barrier *	Repair Storm Damage
Culverts *	Replace Bridge Bearings
Drainage *	Replace Joint Seals
Earthwork	Replace PCC Pavement
Electrical Facilities *	Retaining Wall *
Equipment Yard *	Roadway *
Erosion Control	Rock Slope Protection
Establish Existing Planting	Runaway Truck Ramp
Expressway *	Scale Facility *
Fence *	Seal Coat
Flashing Beacons	Seal Cracks
Freeway and Structures	Signals *
Freeway *	Signs *
Grading and Paving	Slurry Seal Coat
Groove Pavement	Sound Wall *
Guard Railing *	Storage Building *
Highway Planting	Viaduct *
Inspection Facility *	Wastewater Disposal System *
Interchange *	Water Supply System *
Interconnect Signals	Wheelchair Ramps
Irrigation System *	Widening
Lighting *	Wing Wall *
Maintenance Station *	
Modify Gores	APPENDIX 2E-1
Overcrossing *	TYPE OF WORK MODIFIERS
Overhead *	
Park and Ride Facility	Modify
Passing Lane	Reconstruct
Pavement Markers	Remove
Pavement Markings	Repair
Pumping Plant Equipment *	Replace

APPENDIX 2F (PS&E CADD Submittal)

(This Form Should Be Filled Out By The Qualified CADD Contact Person)

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

PS&E CADD SUBMITTAL

ESC - OE -0021 (8/7/98)

Date _____

This is a - - ☐ Original ☐ Revise/Replace ☐ Additional ☐ Addenda**Check Two**☐ District / ☐ Structures☐ Imperial / ☐ Metric

Dist./SourceEA	District/County/Route		
Post Mile or Kilometer. Post			
District Project Engineer	Phone Number	Project Manager	Phone
District Structures CADD Contact Person		Delineator E-Mail Address	Calnet/Fax

PROJECT IDENTIFICATION

Node ID / Address / File Name		
Directory Size (Blocks/Bytes)	Total No. Files	Total CADD Sheets

PS&E DIRECTORY CHECKLIST

- | | |
|---|--|
| <input type="checkbox"/> Place Proper Signature | <input type="checkbox"/> File Design |
| <input type="checkbox"/> Place Registration Seal Information | <input type="checkbox"/> Delete Unused Named Views |
| <input type="checkbox"/> Follow Leveling Convention (As Per Manual) | <input type="checkbox"/> Directory / File Protection For ESC-OE Access |
| <input type="checkbox"/> Follow Electronic File Naming Convention | <input type="checkbox"/> Plot Files Rotated 0 or 90 Degrees |
| <input type="checkbox"/> Remove Extraneous Information | <input type="checkbox"/> Plot Files Generated From Fenced Cut - lines |
| <input type="checkbox"/> Place All Files In PS&E Directory | <input type="checkbox"/> Display Properly |
| <input type="checkbox"/> Display Correct Levels In Design Files | <input type="checkbox"/> Specially Added Files (list) |
| <input type="checkbox"/> Check For Current Time/Date Stamp | _____ |
| <input type="checkbox"/> Final Check Print Created On Current Plotting System | _____ |
| <input type="checkbox"/> Establish Plot View For All Design Files | _____ |

ESC -OE Engineer's Revised Submittal Approval(Initials)
ESC -OE

Special Instructions:

For ESC Project Plans
Use Only

To: _____

Date In _____ Date out _____

Package Received: _____

Received by: _____

APPENDIX 2G (Signature and Seal Sheets)

CONTRACT NO. 00-000004

DESIGN OVERSIGHT APPROVAL		REGISTRATION NO.	DATE
PRINTED NAME	SIGNATURE		

Complete for projects prepared by consultants or local agencies only.

Approved as to impact on State facilities and conformance with applicable State standards and practices as described in the A & E Consultant Services Manual.

The special provisions contained herein have been prepared by or under the direction of the following Registered Persons.

STRUCTURES

REGISTERED CIVIL ENGINEER



HIGHWAY

REGISTERED CIVIL ENGINEER



TRAFFIC

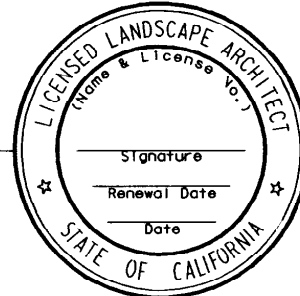
REGISTERED CIVIL ENGINEER



APPENDIX 2G (Continued)

LANDSCAPE

LICENSED LANDSCAPE ARCHITECT



ELECTRICAL (HIGHWAY)

REGISTERED CIVIL ENGINEER OR
REGISTERED ELECTRICAL ENGINEER



ELECTRICAL (STRUCTURES)

REGISTERED ELECTRICAL ENGINEER



MECHANICAL

REGISTERED MECHANICAL ENGINEER



APPENDIX 2H (Drafting Plan Review Checklist)

THIS FORM SHALL BE COMPLETED BY THE DESIGNATED PROJECT REVIEWER ONLY -PLEASE PRINT CLEARLY

Project Plan Review Check List
(For District Or Structures Use)DIST/STRUCTURES ☐ District ☐ Structures **IMPERIAL/METRIC** ☐ Imperial ☐ MetricPROJECT I.D. _____ Dist/SourceEA _____
DIST. / COUNTY (S) / RTE (S) / PM

DATE REVIEWED _____ PROJ ENGR _____ PHONE _____

DRAFT REVIEWER _____ DIST O.E. _____ PHONE _____

IS THIS A CONSULTANT JOB ☐ Yes ☐ NoTYPE OF PLANS ☐ CADD ☐ CONV ☐ OtherTOTAL SHEETS

--	--	--

CADD CONV. OTHER**PROJECT REVIEW CHECK RECOMMENDS...**

- ☐
- SEND PLANS TO ESC WITH PS & E PACKAGE
-
- ☐
- RETURN PLANS TO PROJ ENGR FOR ADDITIONAL CHANGES

TITLE SHEETS

- ☐
- Seal / Signatures
-
- ☐
- Design Oversight Approval for Consultant Projects-
-
- Lower Left (Printed Name, Signature, Registration No.,
-
- Date of Signature) and PS&E Note
-
- ☐
- North Arrow / Bar Scale or No Scale
-
- ☐
- Correct Contractor's Note (lower left)
-
- ☐
- County(ies) Where Project Located Shown on Location
-
- Map (Outlined / Crosshatched)
-
- ☐
- Project Description In Accordance With Section 2-2.1
-
- (B) Of The Plans Preparation Manual
-
- ☐
- Leave Sheet Index Blank
-
- ☐
- Check All Lettering
-
- ☐
- All Features In Project Title Must Be Identified On
-
- Strip Map
-
- ☐
- Project E.A. In Lower Rt. Border
-
- ☐
- Dist. / Co. and Disclaimer Note
-
- ☐
- Show Destinations W / Arrow On Strip Map
-
- ☐
- Show City or County Limits
-
- ☐
- Show City Names Of Incorporated / Unincorporated
-
- Areas (caps / upper/lower respectively)
-
- ☐
- Bridges Shown By Symbol, Also Show Bridge Name,
-
- Type (O.C. or U. C.) and Number if Structure Plans Are
-
- Included
-
- ☐
- Label Waterways/Railroads and All Relevant St Names
-
- ☐
- Identify All Signed Routes On Strip Map (use no
-
- shields)
-
- ☐
- Show Construction Limits Or Location Of Construction
-
- Including Stationing and K.P.'s

PLAN SHEETS

- ☐
- Seal & Signature
-
- ☐
- North Arrow (use appropriate size)
-
- ☐
- Scale (if applicable)
-
- ☐
- Proper Sheet Identification in Lower Rt. Corner
-
- Including The Correct Sheet Identification Code /
-
- Plan Number
-
- ☐
- Use Standard Line Symbolology (dropout where
-
- applicable)
-
- ☐
- Lettering Or Text (dropout where applicable)
-
- ☐
- Drainage / Profile Grids (should be in dropout)
-
- ☐
- Check Details For Reduction Suitability
-
- ☐
- Other
-
-
-
-

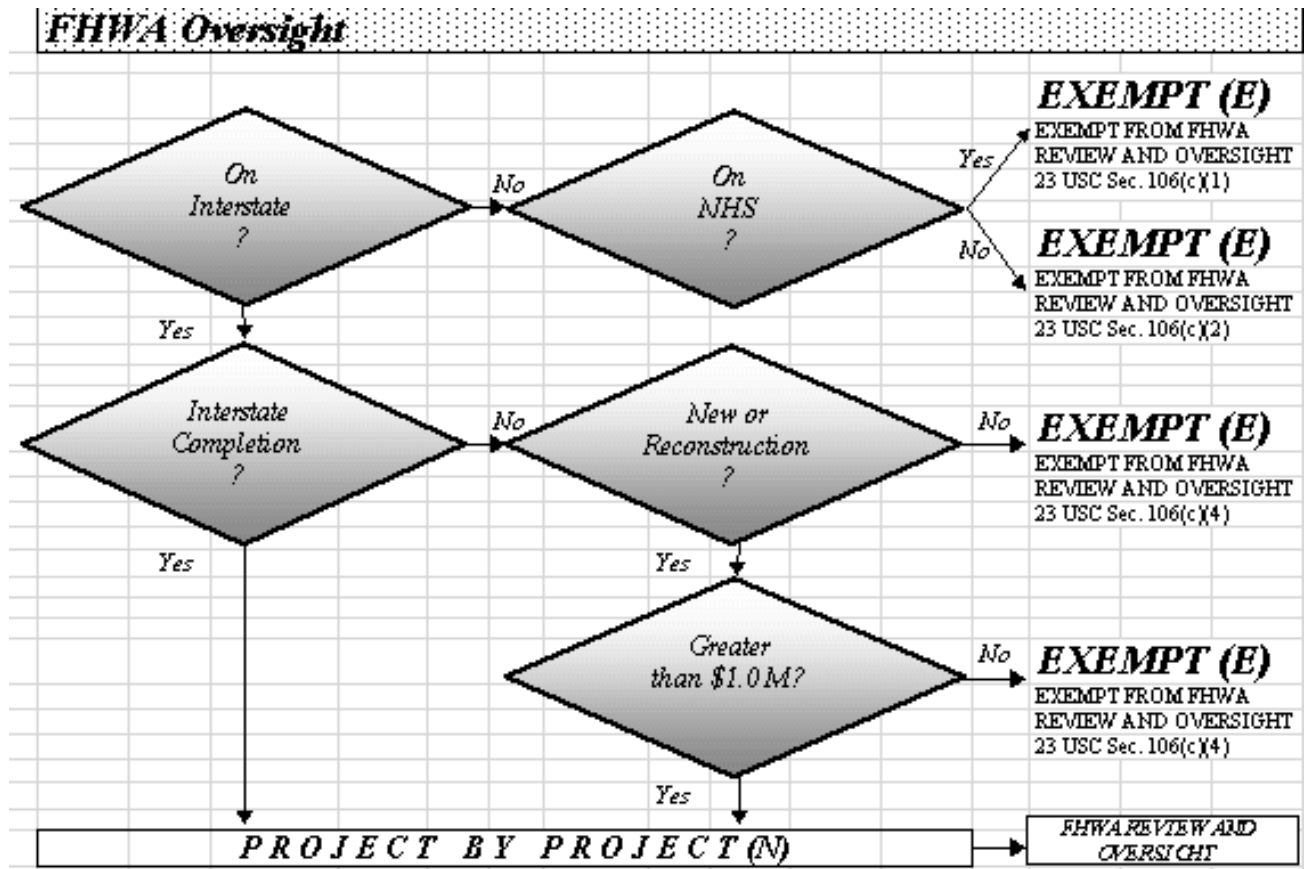
IMPORTANT

- ☐
- Plot Verification _____
-
- initial
-
- ☐
- Electronic Date / Time Stamp
-
- Indicated on plans

COMMENTS:

APPENDIX 2I (FHWA Oversight Determination)

Note: For further detail on USC Code Sections and "reconstruction" as used below, see following page.



Passage of the Transportation Equity Act for the 21st Century (TEA-21) modified the original delegations to the States by the Federal Highway Administration (FHWA) as provided by the Intermodal Surface Transportation Act of 1991.

APPENDIX 2I (Continued)

Under the provisions of Section 106(c) of Title 23 of the U.S. Code, Caltrans has assumed responsibility for design, plans, specifications, estimates, contract awards, and inspections of projects described below unless the State or FHWA determines that such assumption is not appropriate.

Section 106(c)(1)

- For projects that are on the National Highway System but not on the Interstate System.

Section 106(c)(2)

- For projects that are not on the National Highway System.

Section 106(c)(4)

- Unless otherwise provided in Section 106, provisions of the May 12, 1992 Stewardship Agreements continue to apply. This means that Caltrans continues to assume responsibility for design, plans, specifications, estimates, contract awards, and inspections of 3R projects on the Interstate System. Caltrans also continues to assume responsibility for design, plans, specifications, estimates, contract awards, and inspections of new construction and reconstruction projects on the Interstate System (except Interstate Completion) estimated to cost less than \$1,000,000.

Reconstruction as used in the FHWA Oversight Determination chart on the previous page is defined as:

The addition of a lane (except climbing, or auxiliary lanes).

Significant change in horizontal and/or vertical alignment.

Reconstruction of an interchange by adding moves, or relocating (widening ramps for storage or turning movements are not included).

Replacement of an entire bridge or major parts of an existing bridge (in such manner that it is equivalent to a new bridge).

Seismic retrofit projects for the following:

- Major or unusual structure.
- In excess of \$5 million per structure (work will be considered to have a substantial effect on the structural capacity of the structure).

Major modifications to Traffic Management Centers.

APPENDIX 2J (Project Engineer's Certification of Utility Facilities)

(Dist-Co-Rte-km)	(EA)
(description)	<div style="text-align: center;">Within Construction Area?</div> <div style="display: flex; justify-content: space-between; font-size: small;"> yes* no </div>

----- REQUIRED INFORMATION -----

High Risk Facilities (list, describe with location, and disposition):

Low Risk Facilities (list, describe with location, and disposition):

* (All High and Low Risk Utilities within the construction area must be positively identified.)

----- OPTIONAL INFORMATION -----

Other Utility Facilities (list, describe w/location, and disposition):

APPENDIX 2J (Continued)

----- OTHER INFORMATION -----

(Mark appropriate box)

- ☐ This project does **not** contain deviations from Caltrans' Policy on High and Low Risk Underground Facilities Within Highway Rights of Ways.
- ☐ This project contains deviations from Caltrans' Policy on High and Low Risk Underground Facilities Within Highway Rights of Ways. These deviations from policy have been reviewed and approved by the Chief, Design and Local Programs.

I hereby certify that the above listed facilities are located within the project limits and that this project conforms to the Policy on High and Low Risk Underground Facilities:

REGISTERED
DATE

CIVIL

ENGINEER



Note: For purposes of this certification, Project Engineer is considered to be the person in responsible engineering charge of the project.

APPENDIX 2K (Budget Verification of Special Funded Projects)

(NOT VOTED BY CTC)

DISTRICT:

EXPENDITURE AUTHORIZATION:

COUNTY:

ROUTE:

KILOMETER POST:

ESTIMATE OF COST: \$

FISCAL YEAR(S):

SOURCE OF FUNDS:

SIGNATURE

DISTRICT RESOURCE MANAGER

DATE

APPENDIX 2L (Informal Contract Submittal Checklist)

The following items may be E-mailed to ES-OE:

- 1) Electronic Export File
- 2) Electronic Specifications

• The following items may be sent by FAX to ES-OE:

- 1) Request for Director's Order
- 2) Request for Funds (G-11)
- 3) Damage Assessment Form (if applicable)
- 4) Cover Memo & Attachment "A" (signed!)
- 5) R/W certification
- 6) Required Permits
- 7) Certification of Utilities (high/low risk)
- 8) Copy of the combined BEES
- 9) CADD submittal
- 10) Environmental Clearance
- 11) Engineer's seal & signature sheet (for spec book)
- 12) list of bidders **

** A list of 7 to 10 Contractors who have been contacted and have indicated an interest in bidding the contract. They should be informed about the general type of work and the approximate total cost of the project, and the tentative schedule (ad, bid opening, start work).

The list should include:

- 1) Company name
- 2) Street address (not a PO box)
- 3) Telephone number
- 4) Fax number
- 5) Contact person (if possible)

APPENDIX 2M (Public Interest Finding Form)

(Use latest form)

3 PROJECT ESTIMATE OF COST

3-1 GENERAL

The Project Estimate of Cost serves two purposes:

- It estimates the fair and reasonable price the State should expect to pay for each of the items of work to be performed, based on expected prices as of the date the estimate is made. The preliminary estimate should be the best guide in determining whether or not the bids were valid and competitive.
- It identifies all funding sources and segregation that will be used on the project and identifies funding participation levels.

To estimate the price of individual items, use recent bid prices for similar projects considered to have had competitive bidding. Bid price information can be obtained from the bid summaries, contract items by item number report, annual cost data books and California Construction Cost Index published by the Division of Office Engineer in the Engineering Services (ES-OE). Contact your District BEES Coordinator to obtain copies of these materials.

Consider factors which might affect bid prices, such as: project location and accessibility, project terrain, effect of existing traffic on the contractor's operations, source and availability of materials and water, time limits which might require more than ordinary overtime work or double shifting, and season of the year in which the work is to be done.

The amount of funds allocated for the project should not influence the estimated prices. Reducing prices to keep the estimate of cost within the program amount or the "Minor" limit will not reduce bid prices at the time bids are opened. Bid overruns can cause serious problems such as delay of award, or rejection of bids and project readvertisement.

Bear in mind that funds are for project improvement (Capital Outlay) only. Do not set up funds for items to become State facilities if those items are to be used for other purposes. (Example: It would be illegal to have funds for Changeable Message Signs for traffic control and then turn such signs over to maintenance forces.)

Basic Engineering Estimating System (BEES)

Estimates are prepared using the Basic Engineering Estimating System (BEES). This system:

- provides the data files required for the Project Information Systems and Analysis (PISA)
- provides the data needed by the Bid Opening and Progress Pay System
- produces segregated estimates according to fund source.

Estimators are to use the BEES for the segregated estimates on Federal Aid and cooperative projects as soon as the participatory rules for the project are determined. (See Section 3-9, "Segregated Estimates".) Segregated estimates for those projects with contributor funding or federal funding must be available in BEES at the time of PS&E delivery. PS&E submittals with structures elements will be granted an exception to the segregation requirements due to the fact that the ES-Structures is still completing the structures estimates on the project at the time of the District submits the PS&E to ES-OE. The BEES must be included with the PS&E for such projects at the time of submittal, but two additional weeks will be allowed for resubmittal of the BEES with correct segregation. This exception does not apply to informal contracts, i.e., emergency or seismic retrofit projects. Segregated BEES submitted after that time will be considered late and contract award may be delayed. A correct funding segregation of both highway and (if applicable) structures portions of the BEES is necessary to ensure proper CTC funding and timely award of a project after bids are opened. No changes should be necessary to any segregation once the project is listed for advertisement.

Just before listing the project for advertisement, ES-OE "locks" the BEES. After the file is "locked", only ES-OE can alter it electronically. No further changes to the BEES from the District can be permitted. District changes to the BEES must be made prior to the listing period.

Submit a combined estimate for all projects involving ES-Structures. Include all elements of the project such as railroad work, temporary or detour structures (and their removal), removal of existing structures, supplemental work and mobilization. (See Section 3-2.02 regarding use of the item of mobilization.) District and ES-Structures estimates should use the same EA and Keyword in BEES for the estimate file that will be used for PS&E. The BEES shall be in Phase 1.

The BEES permits independent storage of data from the District and ES-Structures for each project and the recall of separate or combined estimates. Highway estimate (H) and structures estimate (B) files must be established independently. Each office is responsible for updating of its own file. Reports may be requested as highway (H), structures (B) or combined (C) by entering the code (H, B, or C) in the appropriate area on the BEES Report Request Form. If the highway and structures files were entered under different EA. These files must be merged before requesting a combined estimate.

The District is responsible for segregating estimates and updating segregated BEES files.

When a combined estimate report is requested, BEES integrates the quantities for highway and bridge items. Where common contract items have different item prices, the item price in the highway estimate file will prevail. Structures and highway estimators should agree in advance on prices of such common items.

Preview common ES-Structures and District items, such as temporary railing, to avoid duplicate quantities in the estimate. For projects with common features such as retaining walls designed by both District and ES-Structures, the same contract pay items should generally be used. However, if the Structures item is a final pay item and the District item is not, the item should be a final pay item if they are combined. When common, adjacent features such as retaining walls and bridges are paid for with different sets of pay items, the plans must clearly indicate limits of payment for each pay item.

The Project Estimate of Cost has these components:

- Contract Items.
 - Supplemental Work.
 - State-furnished Materials and Expenses.
 - Contingencies.
-
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3-2 CONTRACT ITEMS

3-2.01 GENERAL

Contract items are the bid items of work used in the Engineer's Estimate in the Proposal and Contract Book.

List the items of work in numerical sequence by Item Code number. The item description should be exactly as shown in the BEES Coded Item List published by ES-OE. The coded item list is stored in a mainframe computer master file and is maintained and updated by ES-OE. A copy of the coded item list may be requested through the District BEES coordinator.

Overhead

Use SSP 08-017 in projects with an estimated cost of \$5 million or more or with 250 or more working days.

Non-Standard Items

When work does not fit an established item, insert a nonstandard item into the estimate. The item description should be understandable but as brief as possible. Use the same style and format as that used for standard items. Do not use abbreviations. Insert the non-standard item with similar items of work or list it according to the sequence of events.

For non-standard items, add an alpha character to any six-digit standard item code number. The six-digit portion of the number determines the numeric position of the non-standard item in the estimate. (Example: 190101A.) During review, ES-OE will assign a one-time number based on the above information. These non-standard assigned numbers are job specific and are not to be reused in later projects. Only standard six-digit numbers and standard numbers with an added alpha character should appear in the estimates.

The abbreviations used for Unit of Measure should be those listed in the user instructions for BEES. If abbreviations are needed for non-standard units of measure, ES-OE must add them to the BEES approved list before incorporating a final estimate into the bid opening file.

3-2.02 MOBILIZATION

Mobilization reimburses the contractor for costs incurred before and during "move in". Use a mobilization item on each Minor A and Major project when the number of working days for the project is 50 or more (excluding plant establishment working days). A mobilization item may be included for projects consisting principally of bridge work even though the project's number of working days and estimated cost are less than the criteria above.

When the ES-Structures has included an item of mobilization, as described above, the District shall include an item for mobilization. The item of mobilization will be 10 percent of the sum of all contract item costs, including the item of mobilization. It is not necessary to enter a dollar amount. Simply enter "10%" in the BEES estimate for the mobilization item price, and BEES will automatically calculate the mobilization cost. If an item of mobilization is included in the estimate, adjust unit prices accordingly.

3-2.03 SPECIALTY ITEMS

Some items of work require equipment and expertise not normally possessed by most general contractors. Therefore, the awarded contractor may have to subcontract these items. Caltrans normally requires the awarded contractor to perform a minimum of 50 percent of the remaining contract work after the cost of specialized work is subtracted from the total contract amount. The Standard Specifications require the prime contractor to perform at least 50 percent of the dollar amount of the contracted work, excluding specialty items. This requirement is to ensure that the contractor does the majority of work and is not just a work broker.

Specialty items of work are designated on the Engineer's Estimate with an "S". Specialty items are to be identified by the District and the ES-Division of Structure Design.

These guidelines apply to Specialty Items:

- When a project contains work that is different from the basic type of work and that would normally be done by a specialty contractor, designate the item or items covering such work as specialty items.
- If the work can be performed by the awarded contractor's forces, do not designate the work as a specialty item.
- The following rules apply when designating specialty items:
 - If the Engineer's Estimate is less than \$500,000, each specialty item must have a value of \$2000 or more.
 - If the Engineer's Estimate is greater than \$500,000, each specialty item must have a value of \$5000 or more.
 - Group items (for example, striping, pavement markings, and pavement markers) to meet the value criterion.

- Keep specialty items to a minimum to ensure that the awarded contractor does the majority of the work. If the awarded contractor is expected to be other than a general contractor, designate as specialty items work which would not be done by the awarded contractor.
- If it is anticipated that the awarded contractor will be a general contractor, limit specialty items to those listed in Table 3A.
- When a highway project involves the construction, alteration or modification of an off-highway building structure, designate items of building work as specialty items.

Table 3A
Approved Specialty Items

ITEM CODE	SPECIALTY ITEMS
120090	CONSTRUCTION AREA SIGNS
120100	TRAFFIC CONTROL SYSTEM
12----	TRAFFIC CONTROL DEVICES SUCH AS PORTABLE CHANGEABLE MESSAGE SIGN, BARRICADE, CONES, ETC.
1531--	PLANE PAVEMENT
20----	EROSION CONTROL, PLANTING, IRRIGATION AND PLANT ESTABLISHMENT WORK
4201--THRU 4202--	GRIND AND GROOVE PAVEMENT
490340 THRU 499010	DRIVING PILES, CAST-IN-DRILLED-HOLE CONCRETE PILING AND SHEET PILING
500001	PRESTRESSING CAST-IN-PLACE CONCRETE
5124--THRU 5125--	ERECT PRECAST MEMBERS
515059 THRU 515165	CORE CONCRETE
517950 THRU 518220	SOUND WALLS
519080 THRU 519119	JOINT SEALING
5201--	BAR REINFORCING STEEL
5301--	SHOTCRETE
5400--THRU 5401--	WATERPROOFING
5502--	ERECT STRUCTURAL STEEL
5601--THRU 5610--	INSTALL SIGN STRUCTURES, CAST-IN-DRILLED-HOLE CONCRETE PILE (SIGN FOUNDATION)
5900--THRU 5902--	CLEAN AND PAINT STEEL
60----	RAILROAD TRACK WORK
7110--THRU 719506	SANITARY SEWERS
7405--THRU 7415--	PUMPING PLANT RELATED WORK AND EQUIPMENT
7500--THRU 7505--	MISCELLANEOUS METALS
8000--THRU 8099--	FENCES
8320--THRU 8395--	RAILINGS AND BARRIERS (EXCEPT CONCRETE)
83959-THRU 8396--	CRASH CUSHIONS
8405--THRU 8407--	STRIPING AND PAVEMENT MARKINGS
8501--THRU 8502--	PAVEMENT MARKERS
8601--THRU 8690--	SIGNALS, LIGHTING AND ELECTRICAL SYSTEMS
9901--THRU 9950--	BUILDINGS AND RELATED FACILITIES

If an item listed in Table 3A is a majority of the work (i.e., Highway Planting and Electrical projects), do not designate it as a specialty item.

Furnishing specialty type items, such as "furnish steel piling" or "furnish sign structure" are not to be designated as specialty items.

Items with the prefixes such as temporary, remove, salvage, adjust, remodel, relocate, and reconstruct which are similar to the approved specialty items listed in Table 3A, should also be designated as specialty items. Examples are temporary traffic stripe and reconstruct metal beam guard railing.

3-2.04 FINAL PAY QUANTITIES

Items of work which would prove difficult for the Engineer to measure for payment during construction are designated as Final Pay items. Final pay quantities are to be designated on Engineer's Estimate using (F) or (S-F) as appropriate for the item involved. Do not identify final pay items on the plans.

Payment for final pay items will be made for the exact quantity shown on the Engineer's Estimate unless the Engineer orders a change in the dimensions of the work. The Contractor will not be provided additional payment for quantities which exceed those shown on the estimate, so it is important that final pay item quantities are accurate. Do not round final pay items in the Engineer's Estimate.

The contract items of work listed in Table 3B are generally designated final pay.

Table 3B
Items Generally Designated as Final Pay

ITEM	CONSTRUCTION WORK
Minor Concrete (Minor Structure)	Drainage Inlets and Pipe Headwalls
Miscellaneous Iron and Steel	Frames and Grates
Class 1 Concrete (Structure)	Box Culverts and Wingwalls
Bar Reinforcing Steel	Box Culverts and Wingwalls
Furnish and Install Sign Structures (Tubular, Truss, Lightweight, etc.)	Overhead Sign Structures
Structure Excavation (Bridge)	Bridges
Structure Backfill (Bridge)	Bridges
Structural Concrete, Bridge	Bridges
Structural Concrete, Bridge Footing	Bridges
Structural Concrete, Approach Slabs	Bridges
Sound Wall (Masonry Block)	Walls, Bridges
Structural Concrete, Retaining Wall	Retaining Walls
Bar Reinforcing Steel (Bridge)	Bridges
Bar Reinforcing Steel (Retaining Wall)	Retaining Walls
Miscellaneous Metal (Bridge)	Bridges
Miscellaneous Metal (Restrainer)	Bridges
Railings and Concrete Barrier on Structures	Bridges
Pipe (Supply Line)	Irrigation Systems

Verification of final pay quantity calculations is to be included, in the space provided on the PS&E Cover Memo of the PS&E Submittal. (See Appendix 2A.)

3-3 SUPPLEMENTAL WORK

Supplemental Work is work which is anticipated and required for completion of the project but is of such an uncertain nature or amount that it cannot be done on a contract item basis.

Do not use Supplemental Work:

- to take the place of complete design work and quantity calculations. When work can be shown or specified such that it is biddable, it must be paid for by contract item.
- to provide extra funds for contingencies by adding items or amounts in excess of what can be reasonably anticipated.
- to perform work which should be funded from other sources.

- for contract funds to be paid to anyone other than the contractor such as railroad inspection work. Include these funds under State-Furnished Materials and Expenses.

The Standard Specifications indicate that various portions of removal work (unsuitable material, slides, buried manmade objects, etc.) will be paid as extra work. Funds for this work should come from contingencies unless specific information is available to show that the amount of work is sufficient to justify a separate entry in Supplemental Work.

Work mentioned in a general way in the contract special provisions should be funded from contingencies unless specific information is available to show that the amount is sufficient to justify a separate entry in Supplemental Work.

Itemize any extra work identified in the contract special provisions as Supplemental Work, except as discussed above.

The following maximum values have been established for Individual Supplemental Work Items. Justification must be provided with the PS&E Submittal for Individual Supplemental Work items equal to or greater than the following dollar amounts or percent of the total amount of Contract Items, whichever is greater.

Maximum Values Individual Supplemental Work Items	
Contract Item Total	Maximum Value
< \$300,000	\$4,000 or 5%(Contract Item Total)
< \$1,000,000	\$15,000 or 2.5%(Contract Item Total)
> \$1,000,000	\$25,000 or 1%(Contract Item Total)

Unless specifically excluded in Table 3C below, the following maximum values have been established for the sum total of individual Supplemental Work.

Justification must be provided with the PS&E submittal for Total Supplemental Work values equal to or greater than the following dollar amounts or percent of the total of Contract Items, whichever is greater:

Maximum Values Total Supplemental Work	
Contract Item Total	Maximum Value
< \$300,000	10%(Contract Item Total)
< \$1,000,000	\$30,000 or 5%(Contract Item Total)
\$1,000,000 - \$5,000,000	\$50,000 or 3%(Contract Item Total)
\$5,000,000 - 25,000,000	\$150,000 or 2%(Contract Item Total)
> \$25,000,000	\$500,000 or 1%(Contract Item Total)

Base the justification for supplemental work on factual information, such as experience with similar work, conditions, and materials. Deviations from these guidelines must be approved by the Office Engineer or the Construction Program Manager. See Appendix 3B for a sample justification memo.

When an anticipated quantity of work cannot be estimated within 25 percent, it is appropriate to establish a contract item with the quantity set at a level such that an underrun of more than 25 percent is unlikely. Funds can then be included in Supplemental Work to cover overruns.

Table 3C is a partial listing of types of work for which it would generally be appropriate to include funds in Supplemental Work. (See next sheet)

Table 3C
Partial Listing of Appropriate Supplemental Work Item

Type of Work	Conditions for Using as Supplemental Work
Additional Asphalt Concrete Additional Imported Borrow Increased Paving Asphalt	Only if the type of work is a large percentage of total, material source is not known, and material from different likely sources varies greatly in density.
Clean and Seal Random Cracks Salvage and Stockpile Excess Screenings	
Remove Unsuitable Material Remove Slide Subsurface Drainage	If evidence indicates more than can be funded from contingencies.
Maintain Traffic (include flagging costs)	Excluded from individual and total guideline limits.
Maintain Detour Maintain Existing Electrical System	If need for extra work is related to the work being performed on the project in question.
Detour Signing	If on local streets or roads.
Settlement Platform Installation	
Compensation Adjustments for Price Index Fluctuations of Paving Asphalt	For projects with 4 500 tonnes of asphalt concrete and 50 working days. Excluded from individual and total guideline limits.
Federal Trainees	If project is Federal Aid eligible, with at least 100 working days. See Appendix 3A for guidelines. Excluded from individual and total guideline limits.
Maintain Existing Plants Prune Existing Plants Disposal of Removed Plant Material Mowing Locate Existing Irrigation Facilities Modify Existing Irrigation System Apply Pesticides Modify Existing Backflow Preventer Remove Rock and Debris	Excluded from total guideline limit for Highway Planting projects and Establishing Existing Plants projects. There is no exclusion on any individual Supplemental Work item.
Additional Footing Work	Earthquake Retrofit projects.
Clean Deck Joints	Bridge maintenance projects.
Damage Investigation	Bridge Repair projects.
Incentive for Asphalt Concrete QC/QA	QC/QA Projects - Equal to 4% of estimate for asphalt concrete. Excluded from individual and total guideline limits.
Partnering	Projects with estimated cost of \$1,000,000 or more. Excluded from individual and total guideline limits.
Disputes Review Board	Projects with estimated cost of \$10,000,000 or more. Excluded from individual and total guideline limits.
Value Analysis	Projects with estimated cost of \$5,000,000 or more - Add \$10,000. Excluded from individual and total guideline limits.

Table 3D provides a partial list of types of work for which it is normally inappropriate to include funds in Supplemental Work.

Table 3D
Partial Listing of Inappropriate Supplemental Work Items

Type of Work	Reason for Not Using Supplemental Work
Additional Roadwork Additional Drainage Work Additional Electrical Work Improvement for Safety Unspecified. Possible. Miscellaneous.	Too general. Entries for this type work may be appropriate if they are more specific.
Environmental Mitigation	Too general. Item encompasses various items of work that should be separated out.
Clean Out Existing Culverts Repair Existing.	Improper to perform maintenance work if funded from other than Maintenance funds.
Railroad Work Electrical Service Resident Engineer's Office Motorist Service Patrol Traffic Management Plan	Include under State-furnished Material and Expense unless paid to or through Contractor.
Haul Material	Should be included in contract item work.

3-4 STATE-FURNISHED MATERIALS AND EXPENSES

Items to be listed under this component consist of:

- work to be done by State forces or others concurrently with contract construction operations; or
- materials to be purchased and charged against the project but to be paid for directly by the State, not the contractor.

Item codes for this category of work must have a 06 prefix (06XXXX) to be properly calculated in the BEES. State-furnished materials and expenses are to be subtotaled and included as part of the total cost of the project.

Typical items of State Expense include payment to a utility company to provide water meters and electrical service or work to be done by a railroad or other agency under a service contract.

Rental cost for a Resident Engineer's office is normally included when:

- a single project cost exceeds \$300,000 and the project time limit is 50 or more working days.
- there are several projects in the same area and the total funds for these projects exceeds \$300,000 and the time required to complete all of the projects will probably exceed 50 days. In this case, the cost of the office should be distributed proportionally among the projects involved according to their estimated use of the office.

FHWA has approved the following materials as being in the public interest for Caltrans to furnish to the contractor as State-Furnished Materials on Federal Aid Projects:

- Permanent sign panels and mounting hardware
- Types N, P, and R object marker panels and reflectors
- Laminated wood box posts and metal caps
- Survey Monument Disks
- Markers for railings and concrete barriers
- Traffic signal controller assemblies, including wired cabinets and loop detector units
- Closed circuit television cameras, changeable message signs and assemblies
- Lamps for traffic signal units, flashing beacons and sign illumination fixtures
- Asphalt concrete sealant for inductive detector loops
- Self-adhesive reflective numbers and sealer for numbering lighting equipment
- Recycled (salvaged) material in stock, such as temporary traffic signals and flashing beacons
- Seed and plants not commercially available, either by type or size, that must be grown or obtained for specific projects

Obtain FHWA concurrence for any materials not listed above on a project-by-project basis during PS&E development.

When the U.S. Forest Service requires payment for merchantable timber, Caltrans should pay the Forest Service directly. Include an item in "State-Furnished Materials and Expenses" to provide payment from construction funds.

3-5 CONTINGENCIES

The next-to-last entry of the Project Estimate of Cost is to allow for contingencies. Typically, the amount for contingencies will be a nominal 5 percent of the subtotal of the cost of contract items, supplemental work, and State-furnished materials and expenses. The contingency amount is included in the grand total of the final estimate to allow for unforeseen costs. Projects which are primarily asphalt concrete may only need a 2 percent contingency. For some small projects, a 10 percent contingency may be justified if there is a greater likelihood of unforeseen costs because of the nature of the project or the site of the work.

The BEES system automatically allows for a contingency of 5 percent, but any amount may be entered, either by percent or by specified dollar amount. The BEES adjusts the contingency amount automatically to give a rounded grand total, except when the contingency is entered as a specific dollar figure. Justification must be provided when a contingency of other than 5 percent is used in the final estimate.

3-6 ESTIMATING ITEM PRICES

Estimating is not an exact science, and no estimator can be "right" all the time. However, estimators can prepare reasonable estimates of the cost of the work to be performed by the contractor.

Estimates should never be artificially reduced to stay within the funding limits, nor should they be reduced to make available more project funding for the District.

Most overruns are due to conditions that existed at the time the estimate was initially prepared and should have been considered. Estimators should consider the following factors which experience has shown will affect the bid prices on construction projects.

3-6.01 FLUCTUATION OF COSTS

Review and update estimates as near project "Listing" for advertisement as possible. Include an updated BEES estimate with the District Response Memo.

When the District submits the PS&E as a "Qualified" project, the estimate in the PS&E Submittal becomes the final, updated estimate. If ES-OE performs a telephone review or lists the project shortly after PS&E delivery, the BEES estimate submitted with PS&E will suffice. BEES Item Price and Quantity Reports contain dates when item prices and quantities were last updated.

Material shortages may develop at unexpected intervals, causing an increase in material prices. Wages continually increase, although usually at a somewhat predictable rate. The time of year a project is advertised or constructed often affects prices.

Review and update unit prices and estimates as conditions change. Estimates must be current at the time the project is ready to list. The District should review and update the estimate if the California Construction Cost Index is rising or falling frequently and rapidly.

Projects are usually listed for advertising when ES-OE has received the District response to requests for additional information and all advertising constraints are clear.

3-6.02 TRAFFIC CONDITIONS

Traffic conditions can have a significant affect on bid prices. Adjust prices to reflect special difficulties, dangers, and expenses caused by traffic. Contractors are inclined to raise their prices when they bid on projects with difficult traffic conditions.

3-6.03 RESTRICTIVE WORK HOURS OR METHOD OF WORK

Restricting the working hours or the method of work on a project may have a major effect on prices. If the special provisions limit work to nighttime or short shifts, increase unit prices to reflect:

- the cost of premium wages for night work
- premium payment for partial shifts
- general decreases in productivity and efficiency.

Night work for asphalt concrete can be especially expensive where small quantities are involved because asphalt plants do not usually operate at night and may have to do special runs at a much higher operating cost per unit.

3-6.04 SMALL QUANTITIES OF WORK

Small quantities of work will nearly always have higher unit cost than identical work in larger quantities. Move-in cost, overhead, and so on must be distributed over a much smaller base. Production is usually inefficient and slow for small quantities which will also increase unit costs.

3-6.05 SEPARATED OPERATIONS

Separated operations will generally have higher item costs. The order of work or scattered locations of work may require portions of a work unit to be constructed as separate operations, each requiring separate move-in and move-out costs. The unit prices should then be based on the smaller operations, not on the total quantities for the project.

3-6.06 HANDWORK AND INEFFICIENT OPERATIONS

Handwork and small or inefficient operations (even though equipment may be used) will have higher unit costs than work adaptable to mass production machine operation or high production rates.

3-6.07 ACCESSIBILITY

Work on an existing interchange may require long out-of-direction movements by construction personnel and equipment if the contractor must observe one-way ramp movements or enter or leave a freeway only at interchanges. Material hauling done under these conditions can be especially expensive.

Work is expensive at the top of retaining walls, on slopes, or where workers must climb slopes to get to the work area, regardless of whether the operation is handwork or is done by equipment. This is because work which is easy to do on level ground or a gentle slope may be almost impossible to do on steep slopes. Such a work situation will affect the contractor's bid.

3-6.08 GEOGRAPHIC LOCATION

Geographically remote locations usually result in higher bid prices. Estimates should reflect subsistence payments when required. The source of supplies and the distance to the project from these sources should also be considered.

3-6.09 CONSTRUCTION SEASON

The time of the year construction is scheduled may affect the bid prices. Contractors are usually more available for work early in the spring and will therefore bid competitively at that time. Later in the spring or summer, many of the contractors have going contracts to keep them busy and therefore tend to bid higher or not at all.

For projects to be awarded near the end of summer or the construction season, it is important to know if construction can be finished before the construction season ends. If a job cannot be finished before the end of the construction season, contractors will increase bid prices to cover overhead during winter suspension, to repair winter damage, and so on. Even if contractors reasonably expect to finish before winter, they may protect themselves by increasing bids to allow for damage due to early rains. This is especially true if construction involves work in or around drainage channels in high precipitation or snow areas.

3-6.10 MATERIAL SHORTAGES

Material shortages will have a major affect on bid prices since prices are directly affected by supply and demand. Where a shortage is especially acute, the District might consider a change in design rather than face increasing prices.

3-7 ESTIMATE PRICING METHODS

There are two methods commonly used for estimating prices. One method is to use previous bid prices as a basis for establishing prices on the proposed project. The other method is to make a complete analysis of production rates, labor costs, and material costs. These methods can be used individually or in combination.

3-7.01 PREVIOUS BID PRICES METHOD

Basing estimates on previous bid prices is probably the most widely used and the most practical method. When using this method, take into consideration these factors:

- Use of approximately the same size and type of project having similar quantities for individual items.
 - Consider using the average of the 3 low bidders or using the second low bidder.
 - At a minimum, revise previous bid prices by the projected change in the California Construction Cost Index between the date of the old bid and the anticipated date of the new bid.
 - Adjust the reference bid price to reflect conditions of the project, such as type of terrain, geographical location, soil, traffic and other related factors.
 - Do not use lump sum bid prices or unit prices for items of work (for example, culverts) that include varying amounts of other related work.
 - Seasonal work items vary by the time of year. Use comparable months.
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Sources of Previous Bid Prices

Quarterly Report "Contract Items by Item Numbers." -- This report contains all contract items with quantities and prices used in the past quarter, listed by item code number. ES-OE maintains a distribution list. To be placed on the list, contact your District BEES Coordinator.

BEES "Item Price Menu" -- This computer file is accessible through the BEES and contains District and Statewide averages for contract item quantities and prices for the previous twelve months. Data can be extracted by typing item numbers or item description keywords. This system is useful in analyzing which item codes have been used successfully and what the average prices are. In addition, this menu offers "Preliminary Cost Review Report", which compares prices in an existing BEES file with five years of historical data according to user-selected criteria. Access this menu by typing "RUN BEES" at the VM/CMS ready prompt, then selecting item #3 "Item Price Menu". Contact your District BEES Coordinator if you have any questions.

Annual Contract Cost Data Book -- This book contains District and Statewide average prices by contract item number for contracts in a particular calendar year. ES-OE maintains a distribution list. To be placed on the list, contact your District BEES Coordinator.

BEES Program -- If information is available in the BEES and the price field is left blank, the BEES program will automatically input the average price of an item when the item is first used.

3-7.02 COMPLETE ANALYSIS METHOD

This method is not usually practical for all contract items of work. It may be used occasionally for earthwork items where rock or unusual haul is required, or for lump sum items such as signals and lighting.

When using this method, carry-out these initial steps:

- Analyze the proposed construction.
- Estimate production rates.
- Compile a materials list.

Then:

- find materials costs using available price lists,
- determine labor and equipment hours based on the production rates -,
- calculate sub-total using the above factors and finally,
- add overhead and profit for the total cost.

It is especially important to consider possible premium pay for overtime on night work and subsistence. On larger projects with long time limits, it will be necessary to determine if the majority of a work item will be done early or late in the project. To provide for work which cannot be done early in the project, it may be necessary to forecast wage scales and material cost increases in order to accurately estimate contract item costs.

3-8 GUIDELINES FOR ROUNDING QUANTITIES

A PS&E contains two kinds of quantities:

- Actual calculated quantities are shown on the plans to help the contractor and the Engineer complete the project.
- Estimated quantities are included in the Engineer's Estimate in the Proposal and Contract book to simplify bidding and avoid errors in extensions.

With the exception of final pay items and Structure items, quantities must be rounded. In addition to simplifying bidding, rounding keeps the estimate from seeming more accurate than it can actually be. Measurements and calculations cannot always produce absolutely accurate individual quantities. The total quantity, in turn, cannot be more accurate than the least-accurate individual quantity.

Total quantities are to be rounded in the BEES file by adjusting the calculated quantities, usually upward. Round on total or end quantities only, never on partial quantities or subtotals. Quantities on Plans should be actual calculated quantities, never rounded quantities.

Quantities greater than 1 000 are to be rounded to no more than 3 significant figures. The significant figures are those figures of a number that begin with the leftmost figure and extend to the last figure to right that is not zero. For example, 5 050 and 1 620 000 have 3 significant figures.

For example, 1 103 would be rounded to 1 110 and 2 234 541 would be rounded up to 2 240 000.

Quantities less than 1 000 are to be rounded to no more than 2 significant figures.

For example, 426 would be rounded to 430.

Avoid decimal quantities. However, it is not always possible to eliminate the decimal for small quantities. For example, a total quantity such as 1.4 kg of seed (erosion control) cannot be rounded up to 2 kg or down to 1 kg without having an estimated quantity more than 25 percent off the calculated quantity. Therefore, decimal quantities of less than 5 must be rounded to one decimal place. Decimal units can be shown to only one decimal place because of limitations in BEES. Volumetric or weight quantities of 5 or greater are to be rounded to the nearest whole number.

Sometimes it is possible to avoid the use of decimal quantities by changing the unit of measure. For example, use 500 kg of commercial fertilizer instead of 0.5 tonne.

Rounding must not produce a condition where the estimated quantity will be beyond the 25 percent limit for overruns or underruns specified in Section 4 of the Standard Specifications.

Calculated quantities should usually be rounded up in the BEES file.

Final pay quantities entered in the Engineer's Estimate are not to be rounded, except to eliminate any decimal figures for total pay quantities of more than 5 units (cubic meters, meters, etc.). When the total final pay quantities contain decimal figures and they are 5 units or less, the quantity shall be rounded to not more than one decimal place when entered in the Engineer's Estimate.

3-9 SEGREGATED ESTIMATES

Projects having funding sources other than, or in addition to, State funding must have a segregated BEES estimate identifying the sources and levels of funding. Enter all segregated estimates into the BEES during project design. Segregated estimates must be complete when the District submits the PS&E to ES-OE. It is the District's responsibility to segregate the BEES file including ES-Structures items.

3-9.01 FEDERAL AID PROJECTS

Segregated estimates are required when Federal Aid Projects involve any of the following:

- Highway work -- Segregate each item quantity according to Federal Fund type using the appropriate reimbursement ratio. Current reimbursement ratios and applications can be obtained from the Budget Program, Office of Federal Resources, or the FHWA Transportation Engineer.
- Structures -- Separate each structures by component level. Funding segregation used in highway work are not applicable to structures estimates because FHWA requires costs to be identified by individual structure.
- Non-participation items of work.
- Non-participation portions of the project.
- Work paid for by others (for example, cities, counties, or local transportation agencies contributing to construction costs under cooperative agreements).
- Utility relocation when done by contract item work (by Right of Way, Utility, or Railroad Agreement).
- Work which is not a part of the project (work that is being done on the same State contract but outside of the Federal Aid Project limits).

If a Cooperative Agreement or Utility Agreement requires anyone other than the State to pay for any of the contract items, Supplemental Work, or State-furnished Materials and Expenses, then those items are to be segregated as nonparticipating work.

The information needed to prepare Federal segregated estimates is generally available to the Project Engineer before the District completes the PS&E. All funding sources and levels should be determined prior to PS&E submittal to ES-OE and that information should be reflected in the BEES estimate.

The District is to submit the BEES Federal segregated estimates and the draft Form FNM-76 to the Headquarters Office of Federal Resources either:

- at the time the District responds to ES-OE's request for additional information or
 - with PS&E submittal - if the District is submitting the project as a "Qualified" project.
-

3-9.02 DISTRICT AND COUNTY SEGREGATED ESTIMATES

Separate estimates are required to segregate between Districts and between north and south counties. Separate estimates are not required to detail other projects in more than one county. However, a cost distribution (in percent) by counties is to be provided in the BEES "narrative report".

Segregated BEES estimates may be segregated by District, by North and South, and by County using the location code to identify quantities that must be included. Designate location codes at the time of entry into the BEES.

3-9.03 OTHER AGENCIES INVOLVED

Where other sources are contributing funds toward construction through a cooperative agreement, utility agreement, right of way contract, purchase order, or other instrument, a segregated estimate is required which identifies each contributing agency. If there is a cooperative agreement on a project, a copy of the agreement must be included with the copy of the PS&E package sent to Headquarters Office of Federal Resources.

APPENDIX 3A (Federal Trainee Program)

In California "trainees" are registered apprentices. There are relatively few crafts in highway work which utilize apprentices-- brick layers, carpenters, cement masons, electricians, equipment operators, iron workers, pile bucks, and a few others. There are no apprentice teamsters or laborers. The ratio of journeymen to apprentices is generally 5 to 1. Based on these considerations, the number of trainees established for a project should be determined by examining the extent of only the work which is to be done by the apprenticeable crafts. The following procedure should be used as a guide for establishing the number of trainees required:

- 1) Verify that the project has federal aid
- 2) Verify that the project has 100 or more working days
- 3) Check that the sum of the individual totals for the following items in the draft Engineer's Estimate is greater than \$400,000:
 - Excavation (all kinds)
 - Embankment and backfill (but not imported borrow)
 - Drive piling
 - Portland Cement Concrete (all classes except precast items)
 - Sound walls (masonry block)
 - Retaining walls, bin walls, etc.
 - Concrete box culverts
 - Bar reinforcing and prestressing steel
 - Erect structural steel
 - Highway lighting
 - Signal systems, loop detectors
 - Electrical work for pumps, landscaping, etc.
 - Lump sum items for buildings, restrooms, etc.

APPENDIX 3A (Continued)

4) Determine the number of trainees from the total Estimate costs in the categories listed above, using the following table:

\$ Value	Number of Trainees	\$ Value	Number of Trainees
Over 400,000	1	16,000,000	15
700,000	2	18,000,000	16
1,000,000	3	20,000,000	17
1,500,000	4	23,000,000	18
2,000,000	5	26,000,000	19
2,500,000	6	29,000,000	20
3,000,000	7	33,000,000	21
4,000,000	8	37,000,000	22
5,000,000	9	41,000,000	23
6,500,000	10	45,000,000	24
8,000,000	11	50,000,000	25
10,000,000	12	*over 50,000,000	
12,000,000	13		
14,000,000	14		

* 25, plus 1 additional trainee for every \$5,000,000 over \$50,000,000

5) An amount of \$800 per trainee is inserted in the Supplemental Work component of the Estimate using the description, "Federal Trainee Program".

APPENDIX 3B (Sample Justification Memo for Exceeding Supplemental Work Guidelines)

State of California
Memorandum
To : P. KAY ORUFFIN, Chief
Office of Chief Engineer
From : DEPARTMENT OF TRANSPORTATION
NORTH REGION DIVISION OF DESIGN
Subject: Supplemental Funds Request

Business, Transportation and Housing Agency
Date: May 6, 1997
File : 02-TEH-36-KP 147.3
Emergency Restoration
Mill Creek Overflow
02-334001

This is a request for approval to exceed the Supplemental fund limits of 5% Individual and 10% Total in the PS&E Guide. This project is an emergency restoration and was designed and processed through an accelerated schedule. The scope of the project includes replacement of a 1 meter depth section of the roadway at the bridge abutment. At the time of the washout and emergency repair, grouting was used to stabilize soft spots in the abutment fill. The engineer directing the work at that time was not confident under these conditions that this section had attained total stabilization. At this time the pavement surface shows no distress, but there is the possibility of additional work needed once the excavation is started.

The Supplemental Work Guidelines are exceeded due to the following:

Item Code	Item Description	Units	Amount
066070	Maintain Traffic	Lump Sum	\$22,500
066150	Remove Unsuitable Materials	Lump Sum	\$20,000

The total Supplemental Work as indicated above is \$42,500.
The total Estimated Item Work is \$179,220.

The project is on a two-lane highway, and the traffic will be maintained by a 24-hour lane closure and flagging once the roadway section work is started. This item covers the State's share of the flagging cost. Due to the expedient nature of this contract, the Unsuitable Materials item information in this section could not be accurately gathered.


RICHARD J. SAELLEN
North Region Division Chief
Design

4 SPECIAL PROVISIONS

4-1 GENERAL

The special provisions for a construction contract are prepared by District and Structures staff. They are an essential part of the contract and govern over all other parts of the contract. See Section 5-1.04 of the Standard Specifications. The special provisions expand on and complement the Standard Specifications to include project-specific requirements.

All projects are District projects regardless of the construction involved and, as such, the Districts have overall responsibility for every project's special provisions.

Contract Special Provisions provide the legal, administrative and technical requirements applicable to the specific project by incorporating, project specific clauses, Standard Special Provisions (SSPs), and references to applicable Standard Specifications.

The Standard Special Provisions (SSP) are Statewide, approved special provisions sponsored by Headquarters Programs and maintained by the Division of Office Engineer. They are the building blocks or skeleton used to develop project special provisions. See Section "Contents and Organization of Contract Special Provisions" later in this Guide regarding the typical layout of a set of special provisions.

All work to be performed under the contract must be addressed by the Contract Special Provisions regardless of how the work is being paid for. Even in those circumstances where the Standard Specifications do not require complementary information, the work is addressed by citing the applicable Standard Specifications.

Standard Special Provisions

To make it easier to prepare Contract Special Provisions, Standard Special Provisions (SSPs) have been developed by ES-OE in concert with Headquarters Programs, industry, the FHWA, and other interested parties.

Each SSP covers a specific subject matter and does one or more of the following:

- defines items of work consistent with statewide applications.
- cites applicable Caltrans Standard Specifications sections as well as other's standard requirements, e.g., ASTM requirements.
- includes approved amendments to the Standard Specifications and exceptions to other's requirements.

- provides legal or contractual requirements brought about by legislation, environmental concerns, other agencies, or changing conditions such as water shortage or unpredictable asphalt prices.
- covers standard items of work not referred to in the Standard Specifications (for example, "shoulder backing" and "QC/QA asphalt concrete pavement").

Approximately 700 highway-oriented SSPs and 250 building-related SSPs are published on the ES-OE file server and the Internet. ES-OE notifies the Districts when new or revised SSPs are available. SSPs filed on the Internet are updated when necessary. The Internet address to access SSPs and the Standard Specifications is: http://www.dot.ca.gov/hq/esc/oe/specs_html/index.html.

All DOE units and the ES-OE have access to current SSP files on the HQ OE FileServer. Others, such as consultants, have access to the SSPs through the Internet; other Caltrans units can also access the SSPs through the Internet.

Using and Editing Standard Special Provisions

Unless obvious, SSPs include instructions for using or editing the SSPs. If you must deviate from the SSP instructions, the deviation has to be fully explained in an attachment to the PS&E submittal. The District is required to obtain prior approval from the applicable SSP Sponsor* to add new special provisions. The District may be required to obtain prior approval from the applicable SSP Sponsor* to modify existing SSPs beyond that allowed in the instructions. (Refer to Section 4-2.03 for procedures to obtain prior approval.)

*ES-OE has determined sponsorship for each SSP and the information is located in the Guides folder under the 99-SSPs folder in the HQ OE FileServer and Internet site.

Some SSPs do not have specific instructions for their use or instructions for editing paragraphs. Generally, edit SSPs to fit project conditions if the Special Provisions left unedited might confuse or mislead bidders. For example, delete references to materials, application, installation, construction, or measure and payment of items of work not relevant to the project. (See Sections 4-2.01 and 4-2.02)

"Generalized" SSPs should not be edited except as permitted by SSP instructions. They are not to be edited to customize the specification to job conditions or location. Do not edit SSPs to change plural to singular or singular to plural or to rewrite text in an attempt to improve it.

Except as provided above, do not edit SSPs because

- the SSPs have been tried and have been proven to be successful.

- the SSPs are often the result of a legal requirement or an agreement between the State and the industry.
 - using SSPs preserves Statewide uniformity, which will make bids more competitive and the contract easier to administer.
 - the SSPs are the consensus of many knowledgeable individuals, including the functional programs affected.
-

Contents and Organization of Contract Special Provisions

Contract Special Provisions for highway projects are organized as follows:

Sections 1 through 4

These sections set forth

- requirements and instructions to bidders before bidding on the project
- DBE/DVBE requirements the bidder must either meet or show good faith effort to meet.
- project award and execution requirements
- beginning of work, time of completion, and liquidated damages for the project.

ES-OE completes Sections 1 through 4 verifying the time of completion (working days) and liquidated damages furnished by the District.

Section 5, "General" ("S5-000")

This section contains amendments to Sections 4 through 9 of the Standard Specifications and is made up of the SSPs designated as "S5" Series. Currently, ES-OE selects and inserts S5-000 through S5-170 and S5-390 through S5-435. The District includes other "S5" series SSPs in accordance with the SSP instructions.

Sections 6 and 7

Leave these sections blank.

Section 8, "Materials" ("S8-M00", "S8-C00", "S8-W00")

Material specifications are usually included in the special provisions for an item of work. However, since some material specifications apply to a wide range of items, Section 8 of the special provisions is used to avoid repeating the material specification in each item of work. Only use "S8" SSPs applicable to the contract in accordance with the instructions for use.

The Materials section also includes a list of materials which will be furnished by the State to the Contractor for installation on the project.

Section 9, "Description of Bridge Work"

Leave this section blank unless there is bridge work on the project. "Description of Bridge Work" may be required when other facilities designed by ES-Structures, are included in the project. ES-Structures furnishes this section.

Section 10, "Construction Details"

This section contains construction detail special provisions which apply to the project. Section 10-1, "General", contains applicable construction detail special provisions. Highway planting special provisions are normally included under Section 10-2, and the signal, lighting, and electrical special provisions are included under Section 10-3.

Districts are responsible for the submittal of the entire Section 10 provisions regardless of the construction work involved. Typically, the district prepares the highway related special provisions. Structures prepares the special provisions for bridges, retaining walls, etc. When Structures work is involved, the district merges the Structures special provisions into their work and submits the total package to ES-OE.

Section 11

This section is reserved for use by ES-OE when an entire section of the Standard Specifications is rewritten between editions of the Standard Specifications.

Section 12, "Buildings"

Leave this section blank unless there is building work on the project. This section is furnished by ES-Structures and contains the special provisions for building work on a highway contract administered under the Standard Specifications.

Section 13, "Railroad Relations and Insurance"

Leave this section blank unless there is railroad involvement on the project. This section is furnished by ES-Structures.

Section 14, "Federal Requirements"

Leave this section blank unless federal funding is involved in the project. When applicable, ES-OE will insert this section.

Preparation and Submittal of Contract Special Provisions

The contract special provisions portion of the PS&E submittal, consists of SSPs pertinent to the project (except those SSPs included by ES-OE as described above) and other non-standard special provisions for items of work and subject matters not covered by the Standard Specifications and Standard Special Provisions.

Submit contract special provisions to ES-OE electronically. Prepare them in the version of Microsoft Word currently used by ES-OE. Refer to the editing and formatting requirements included in Appendix 4E.

ES-OE will return projects to the District for correction if they do not conform to these requirements.

Before submitting the PS&E, combine contract special provision sections prepared or furnished by ES-Structures with the District contract special provisions. Resolve any conflicts between the structure special provisions and roadway special provisions before submitting the PS&E.

4-2 NON-STANDARD SPECIAL PROVISIONS (NSSPs)

When work is not covered by the Standard Specifications or any of the Standard Special Provisions (SSPs), a non-standard special provision (NSSP) for that work is to be created for the specific project and coordinated with the functional program that will ultimately approve the use of the non-standard special provision. The District is to have approval from the applicable sponsoring unit to use the NSSP prior to submitting the PS&E to ES-OE. ES-OE may determine concurrence from other appropriate functional programs, such as Legal, is needed. (See Section 4-2.03 for DOE special provisions used on a regular basis.)

4-2.01 STYLE AND FORMAT

When creating a contract special provision, clear technical language that can be understood by contractors and suppliers involved in the work should be used. Avoid legal phrases or highly stilted formal terms and sentences (Example: the terms "such", "said", "all", "any", etc.). See Section 4-2.02.

The style of the special provisions should conform to that of the Standard Specifications.

Use the following writing format:

- Describe the work.

- Specify the materials.
- Specify the results of installation or construction. Avoid specifying the method whenever possible. Method provisions limit the contractor's options to do the work and also may increase Caltrans responsibility for the work. The special provisions should specify what is required, not how to accomplish it. However, undesirable methods may be forbidden or restricted.
- Describe the method of measurement and payment. (Follow the formats in Appendix "4A".)

If only one product meets the requirements of the special provisions or if the product is available from only one producer, the special provisions for that product is considered a brand or trade name special provisions. This type of special provisions is governed by "Trade Name" policy as established by Public Contract Code Section 3400. Except for architectural building work, trade names or proprietary items should not be used in the special provisions unless approved by the District Director or District Chief, Division of Design. Include this approval in the PS&E Submittal. See Section 4-4.01.

4-2.02 GENERAL SPECIFICATION LANGUAGE

Use Standard Specifications terminology. In fact, if it's not commonly used in the Standard Specifications, you probably should not be using it.

Do not use proper names of individuals, use titles. (For example: "Superintendent", "Manager").

Use the terms defined in Section 1, "Definitions and Terms," of the Standard Specifications.

Do not use abbreviations or symbols except as follows:

- Use only those abbreviations or symbols identified in Section 1, "Definitions and Terms," of the Standard Specifications.
- Use a degree symbol for temperature only.
- Use (Shift) + (Option) + (-) for single, long dash "—" Do not use double, short dash after Section titles (For example: SCHEDULE OF VALUES.—).

Do not place quotation marks around special requirements.

Do not use smart quotation marks.

Do not write out numbers, except when:

- the number is "one"
- the number begins a sentence
- 2 numbers are together. (For example: ...with two 3-meter traffic lanes on ...)

Do not use a hyphen between a number and a unit of measure except when:

- the number is a decimal and is less than "one" (For example: ... a minimum thickness of 0.6-m above ...)
- the number and unit of measure are used as a "modifier" (For example: ...pipe larger in size than equivalent 600-mm diameter round pipe ...)
- the number is greater than "one" and the unit of measure is singular (For example: 2-kilometer, 25-meter).

Do not use the following or similar terms:

- "approval of the Engineer"
- "acceptable to the Engineer"
- "satisfactory to the Engineer"
- "unless otherwise permitted by the Engineer"

These terms do not replace definite specifications. An exception to the rule is when work is to be performed by extra work, then "as directed by the Engineer" is the proper phrase.

Do not use pronouns that indicate gender.

Do not use the words "such" and "said" to refer to previously specified items.

Do not use the phrase "and/or". This is a non-descriptive phrase. Use "and" or "or".

Do not use the phrases "etc." or "et cetera". These phrases imply unlimited additions.

Use "The Contractor shall ..." and "The Engineer will ...". We tell the Contractor what he shall do. We tell the Contractor what we will provide.

Use "At the option of the Contractor..." when there is a choice for the contractor.

Avoid the use of "all". It is usually redundant. "Finish cabinets" is better than "Finish all cabinets". Better yet, if an instruction to the Contractor, use "Cabinets shall be finished."

Avoid the use of "any". It implies choice.

Do not use the phrase "in lieu of". This phrase is unnecessary. The special provisions already take precedence over the Standard Specifications.

Do not use the phrase "amended to read" in District special provisions or structures reference specifications.

Amended to read clauses supercede the Standard Specifications. Amendments to the Standard Specifications are allowed only in the Standard Special Provisions issued for that purpose and apply to all appropriate projects. They are not to be edited or deleted.

Order of work information belong in "Order of Work" but description of work, materials, results of installation, and measurement and pay clauses belong in the SSP for the contract item.

Subtitles

- The use of subtitles should be kept to a minimum. Subtitles may be necessary when an SSP is lengthy or complex, such as, when the SSP is the complete specification for an item. ALL the information after each subtitle must belong to that subtitle, including "add-on" SSPs.
- A numbered section (Heading 2) is used for an SSP when the SSP stands alone. Do not use a numbered section (Heading 2) if the specification can be added into an existing numbered section SSP or used as an add-on SSP.

References to Specifications

- When reference is made to other sections in the special provisions, use " ... of these special provisions..." Do not use " ... elsewhere in these special provisions..." Do not refer to the special provisions section number, use titles only.
- When reference is made to a specific section in the Standard Specifications, include the Section Number and title. For example: " ...Section 75-1.05, "Galvanizing," of the Standard Specifications ..."
- When referring to Standard Specifications, use either " ... shall conform to the provisions in ..." or " ... in conformance with the provisions in ...", whichever is grammatically correct. For example: " ... Concrete shall conform to the provisions in Section 73-1.01, "Description," of the Standard Specifications..." or " ... shall furnish the Engineer a Certificate of Compliance in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications ..."
- When referring to other Standards, such as, AASHTO and ASTM, or to testing requirements in general, use " ... shall conform to the requirements in ..." or " ... in conformance with the requirements in ...", whichever is grammatically correct. For example: "...Zinc-coated steel sheet shall conform to the requirements in ASTM Designation: A 525 ... " For testing requirements, use " ... will be determined by extraction tests in conformance with the requirements in California Test 362 ..." or "Sealed joints shall conform to the following requirements: ..."

Suggested Wording for Disposal of Materials

_____ shall be disposed of in conformance with the provisions in Section 7-1.13, "Disposal of Materials Outside the Highway Right of Way," of the Standard Specifications.

Suggested Wording for Certificate of Compliance

A Certificate of Compliance for _____ shall be furnished to the Engineer in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications.

4-2.03 DESIGNATED DISTRICT NSSPs AND MODIFIED SSPs

Headquarters programs may give approval for specific District special provisions or modified SSPs into Districts projects on a regular basis. This approval will include putting the District special provisions or SSP modification into the special provisions electronic file, thereby reducing review and preparation time.

The District is to obtain ES-OEs approval through the following process:

- Working through the responsible District functional unit, submit the special provision or revision of an existing special provision to the appropriate responsible Headquarters programs involved (Construction, Traffic Operations, New Technology and Research, and so on) with justification for its use.
- The Headquarters program will, as warranted, investigate the matter and either recommend approval to ES-OE or deny approval to the District.

It is the responsibility of the Headquarters program that recommends approval to circulate it to all other Headquarters programs involved for concurrence prior to submitting to ES-OE. As the administrator of all contracts, Construction Program should always be consulted.

4-2.04 LOCAL AGENCY STANDARD SPECIFICATIONS

Reference to Local Agency Standard Specifications for contract work should be avoided. Applicable specifications for the work involved should be written into Caltrans special provisions. On rare occasions and on an exception basis, Local Agency Standards may be used as a handout. Local agencies often use different methods for measurement and payment in their work. Measurement and payment should be by Caltrans' Standards.

4-3 DISCUSSION OF SELECTED STANDARD SPECIAL PROVISIONS

Due to the number of SSPs on file, it is impractical to discuss them all in this Guide. Most SSPs contain instructions for use and, in general, do not require discussion.

4-3.01 SELECTED SECTION 4 CONTRACT SPECIAL PROVISIONS

The Standard Section 4 of the Contract Special Provisions

- provides that the contractor shall start work within 15 calendar days after the approval of the contract
- specifies the number of working days allowed to complete the contract work
- specifies the liquidated damages to be assessed the contractor for not completing the work on time.

The District is to provide the appropriate Section 4 SSP, number of working days and the amount of liquidated damages to be used in Section 4 of the Contract Special Provisions. This information is to be included in the PS&E Cover Memorandum.

A+B Bidding and Incentive/Disincentive Provisions

District Directors responsible for project delivery are to approve the use of A+B Bidding and/or Incentive/Disincentive (I/D) provisions by following conceptual guidelines specifically developed and approved for the use of such provisions. These guidelines can be found on the California Department of Transportation website under "Project Development Procedures Manual Bulletins" (<http://www.dot.ca.gov/hq/oppd/pdpmb/pdpmbidx.htm>). Choose the bulletin "Delegation of Authority for Use of A+B Bidding and Incentive/Disincentive (I/D) Provisions" dated June 12, 2000. ES-OE will provide the appropriate paragraphs in Section 3 and Section 4 of the Contract Special Provisions.

Working Days

The District has the primary responsibility for setting construction time limits. The District is to incorporate the Division of Structures Design time estimate. Failure to incorporate the time estimate from ES-Structures may affect the bid prices substantially.

Determine the number of working days in this way:

- Ensure that consecutive days are not used for work that could be performed concurrently.
- Ensure that no time allowance is made for work paid for as extra work.
- Ensure that sufficient time has been allowed on projects with short time limits for the following purposes:
 - 7- or 14-day waiting period before placement of pavement markers on new asphalt concrete.
 - Curing time for concrete when it cannot be concurrent with the controlling item of work.
 - 30 days minimum for obtaining railroad insurance.
 - 14 days to determine bitumen ratio of asphalt concrete.
 - Any time specified for performance of utility work.
 - Highway planting, irrigation and plant establishment; coordinate this work with the Project Engineer and the Landscape Architect in the District.
 - Collection of "site specific seed" specified for erosion control work.
 - Plant material that has to be propagated from plants on the project site.
 - Scheduled project start delays to clear previous contracts from Right-of-Way.
 - Review and approval of contractor submittals (for example, material lists, working drawings and plans, and other items specified in the Special Provisions or Standard Specifications).
 - 35 days for approval of equivalent material or article when "Trade Names" are used. (See Section 6-1.05 of Standard Specifications).
 - 90 or more days to obtain mast arm type signal and lighting standards or overhead sign structures.
 - Projects with special work day or time constraints (Example: All work to be done only on Saturdays and Sundays) in which "Maintain Traffic" of the special provisions prohibits work must be addressed to insure no conflict with working days as defined in the Standard Specifications or as redefined by the special provisions.
- Ensure that material shortages have been considered. Provide lead time to obtain materials.
- Ensure that "show-up-time" is not included in the working days. (Working day calendar normally starts 15 calendar days after approval of contract.)
- Working days are usually rounded up to the nearest 5 days.

Under special circumstances, reduced time limits and changes in start of work may be necessary for a project. The District should recommend "Delayed Start" provisions if specialty item contracts (such as seal coats) are numerous and there are few contractors available.

Liquidated Damages

Liquidated Damages cover additional State costs due to the contractor's failure to complete the contract within the specified time and are based on the estimated cost of field construction engineering. In special cases, liquidated damages greater than the estimated field construction engineering cost may be specified provided detailed reasons are given to support the greater amount. In every case, calculations should support the recommended rate. Liquidated Damages are not to be used as disincentives or incentives to encourage timely completion.

Use the following formula for highway construction projects to avoid excessive liquidated damages:

$$\frac{L\% \text{ (See Table below) } \times \text{Engineer's Estimate (Contract Items Total)}}{\text{Working Days (exclude Plant Establishment Working Days)}}$$

Working days used to calculate liquidated damages should not include plant establishment days.

**LIQUIDATED DAMAGES
FACTOR (L%)**

Bid Item Total	Project Type			
	Resurfacing*	New Align Highway	New Align w/Bridge	Others
Over \$5 million	3 %	3 %	3 %	3 %
\$500,000 - \$5 million	3 %	5 %	5 %	5 %
\$200,000 - \$500,000	3 %	9 %	5 %	5 %
Less Than \$200,000	5 %	9 %	9 %	7 %

* Resurfacing projects include AC Surfacing, seal coats, slurry seals, and so on.

Use the following formula for highway planting projects to avoid excessive liquidated damages:

$$\frac{3\% \times (\text{Engineer's Estimate (Contract Items Total - Plant Establishment Estimate)})}{\text{Working Days (exclude Plant Establishment Working Days)}}$$

Except when the minimum Liquidated Damages apply as provided herein, the calculated Liquidated Damages should be rounded up as follows:

CALCULATED LIQUIDATED DAMAGES	ROUND UP
< \$500	\$25 increments
\$500 - \$1000	\$50 increments
> \$1000	\$100 increments

Minimum Liquidated Damages are \$250 a day for projects less than \$2 million and \$300 a day for projects greater than \$2 million.

Internal Time Limits

Except in special cases, it is Caltrans policy to avoid use of internal time limits. On projects which require early completion of a particular portion of the work for which the State does not incur liability if the particular portion is not completed on time, specify in the "Order of Work" section of the Special Provisions that the critical element be completed before other contract work is started; or word the "Order of Work" section to permit other work to proceed concurrently.

Example:

Construction of _____ shall be the first order of work. Nonconflicting work may proceed concurrently with the construction of _____ provided progress is maintained adequately to assure completion of _____ within _____ working days after approval of the contract. In the event satisfactory progress is not maintained, the Engineer may order suspension of such nonconflicting work.

When 2 contracts are closely coupled, even with the above clause in Unit No. 1, it may be necessary to put special cooperation or work-around clauses in the Special Provisions for Unit No. 2.

Consider specifying an internal time limit if the State will incur a liability to others if the work is completed late. On projects where there is an identifiable cost to the State if a particular item of work is not completed on schedule (such as lost bridge tolls, back-charges from a railroad for train delays or costs to construct a detour if the work item is not completed on time), an internal time limit with a separate assessment in Section 4 of the Special Provisions may be specified. The amount of assessment will be based on the actual costs or loss of revenue to the State.

Likewise, if there is an identifiable savings to the State if a project or a particular item of work is completed in less time than specified, additional payment (incentives) may be included.

Requests for internal time limits, separate pay deductions for delay, or additional payments for early completion require sufficient backup data to justify the use of such special provisions.

Do not specify a date to complete the work or use calendar day completion requirements. The contractor cannot control project award, and subsequently, the beginning of work.

Delayed Start

The standard "Delayed Starting Time" Section 4 allows the contractor to start work later than what is normally allowed after approval of the contract for certain types of projects. These projects include:

- Projects that consist of specialized work where a large number of similar projects are being advertised within a short time period.
- Projects with a very limited number of working days.
- Building projects.
- Projects where difficulty or time is needed in the procurement of materials is anticipated. (e.g. steel girders)
- To avoid conflict with ongoing construction in the same vicinity.

This SSP permits work to begin with more flexibility to fit the Contractor's work schedule. Since the start of work is flexible, Caltrans needs more time to schedule the Resident Engineer's forces. Therefore, the 5-day notification before starting work is included in the SSP.

Special Electrical Section 4 SSPs Special Electrical Section 4 SSPs

For projects that require specially fabricated materials or equipment, such as electrical or mechanical materials and equipment, 2 special Section 4 SSPs give the contractor a delayed starting time option.

SSP S4-040, "Sec. 4 Electrical Vendor Statement," requires the contractor to furnish the Engineer with a vendor's statement that the vendor has received and accepted the order for the special materials and equipment the contract requires. The contractor shall furnish this statement within 15 calendar days after approval of the contract. The contractor may do this in lieu of beginning work within 15 days, as provided in Section 8-1.03, "Beginning of Work," of the Standard Specifications. This form

includes the anticipated "fabrication and delivery" time in the working days allowed and lets the contractor start work any time, installing conduit and constructing foundations while waiting for the ordered signal and lighting standards; but has the disadvantage of prolonging work in progress for an extended period.

SSP S4-030, "Sec. 4 Electrical Delayed Starting Time," on the other hand, reduces the time the contractor has work in progress by allowing only enough time for doing the work after the work is started.

Section 4 SSP for Projects with Plant Establishment Work

Section 4 calculations for working days on projects which include plant establishment work must consider the "type" of plant establishment specified. Each type of plant establishment requires a different method to determine total working days, as follows:

- A Type 1 Plant Establishment shall be specified for Highway Planting projects with plant establishment work. A Type 1 plant establishment period begins at the completion of *all* roadway, planting, and irrigation construction work. Total working days on a project with a Type 1 Plant Establishment is equal to the sum total of planting and irrigation working days and Plant Establishment days.
- A Type 2 Plant Establishment shall be specified for roadway construction projects with plant establishment work. A Type 2 plant establishment period begins when the Resident Engineer determines construction activity is complete enough to begin plant establishment.. Plant Establishment work may be performed while roadway construction is in progress, allowing the Contractor to complete work earlier and reduce costs. Total working days on a project with a Type 2 Plant Establishment is equal to, *or less than*, the sum of construction workings days and Plant Establishment days.

The total working days for construction projects must be sufficient to include highway planting, irrigation, and plant establishment work.

Special Water Section 4 SSP

Use the SSP S4-070, "Sec. 4 Water," when the District has determined that water may become unavailable during the contract period due to drought conditions. This SSP provides that Caltrans will consider unavailability of water as a "shortage of materials" and will pay delay costs in the same manner as right of way delays. If it is apparent that water will be unavailable for a prolonged period, these provisions do

not preclude suspension or termination of the contract. Projects for which the District is aware that water is currently unavailable will not be advertised until such time as water will be available.

4-3.02 SELECTED SECTION 5 CONTRACT SPECIAL PROVISIONS

Payments

This SSP provides for limiting payment for early completion items on all projects. Rules for limiting payment include the following:

- Items must be paid for by the lump sum.
- The work must be performed in the early stages of the project.
- The dollar amount specified must be the same as shown in the BEES Estimate.

Use limitation on payment for "early lump sum items" regardless of the number of working days in the project.

This SSP also provides for payment to the contractor for materials on hand. (See Appendix 4B for list of items that qualify for partial payments).

The State Contract Act and the Standard Specifications allow the State/Caltrans to make progress payments for materials furnished by the contractor but not yet incorporated in the work. Some materials may be in short supply; others may require custom fabrication for the project. Having such materials on hand when they are needed may avoid delays in the project. Payment for material on hand encourages contractors to obtain hard-to-get materials early in the life of the contract. Contractors can purchase the materials early yet still recover the use of working capital.

In order to qualify for partial payments for materials on hand, a project must

- Have 90 or more working days (excluding plant establishment time)
- Have a total cost for contract items exceeding \$100,000.

If the above project criteria are met, allow partial payments for materials following these general rules:

- If the Engineer's Estimate is less than \$1,000,000, each item or group you list must have a material value of \$1000 or more.
- If the Engineer's Estimate is greater than \$1,000,000, each item or group you list must have a material value of \$5000 or more.

- Group similar items (for example, culvert pipes and appurtenances) to meet the material value criterion.
 - Items that qualify for partial payment are listed in Appendix 4B.
 - Include items that have to be custom fabricated, even though the items aren't listed in Appendix 4B.
 - Include only high value items that are anticipated to be purchased by the contractor well before incorporating the materials in the work.
-

4-3.03 SELECTED SECTION 8 CONTRACT SPECIAL PROVISIONS

Prequalified and Tested Signing and Delineation Materials

The Department maintains a list of prequalified and tested signing and delineation material. This SSP is updated periodically to add and delete items from the list.

Signing and delineation products are not to be used unless they appear on the approved list. This requirement does not apply to standard wood and metal posts, or other items conforming to the requirements of the Standard Specifications.

State-Furnished Materials

State-furnished materials are materials furnished by the State that the contractor will use in performing planned, permanent work.

If State-furnished materials are to be used in temporary work (such as detours or traffic control) do not include the materials in this SSP. However, the materials should be mentioned in the Special Provisions and included in the BEES estimate under "State-Furnished Materials and Expenses".

The District must determine which materials, if any, will be furnished by the State. See Section 3-4 for a list of materials that FHWA has approved to be State-furnished for Federal participation.

Following are the general rules for specifying State-furnished materials:

- Treat as "State-furnished" any material furnished by a local agency.
- If material is listed in the SSP as State-furnished, the Special Provisions or Standard Specifications must identify where the State-furnished material is to be used. If State-furnished material is to be hauled to the project by the contractor, the specifications must so state.
- If the Special Provisions or Standard Specifications indicate that a material for permanent work will be State-furnished, the material must be listed in the SSP.

- Include State-furnished materials in the BEES estimate under "State Furnished Materials and Expenses".
 - When all of the materials for an item of work are State-furnished, the actual work to be performed by the contractor is to "install" or "construct" the item. The item description, Engineer's Estimate and the Special Provisions should reflect this.
 - Except for those items listed above, do not list items as State-furnished unless justified and approved.
 - Materials not listed as approved by the FHWA on projects requiring full Federal oversight must receive FHWA approval on a project-by-project basis before the materials can be listed as State-furnished on Federal Aid Projects. The District is responsible for obtaining FHWA approval. Without FHWA approval, Federal participation will not be allowed for State-furnished items.
-

Freeze-Thaw Requirements

Use this SSP in projects located in severe climate areas when major concrete structures are to be constructed. Climate areas are shown in Appendix 4C. This SSP is sometimes used when major concrete work is to be constructed in moderate climate areas.

Major concrete work includes:

- bridges
 - box culverts
 - other structures critical to public safety such as retaining walls
 - concrete pavement
 - concrete approach slabs
-

Freezing Condition Requirements

Use this SSP for projects located in severe climate areas when the only concrete work involved is:

- not critical to public safety such as minor structures,
- sidewalks
- low in monetary value
- easily replaced

- minor concrete structures or deck restoration work with any other concrete work.

Climate areas are shown in Appendix 4C.

4-3.04 SELECTED SECTION 10 CONTRACT SPECIAL PROVISIONS

Order of Work

If a portion of the project needs to be completed at the beginning of the contract, designate that portion of work as "the first order of work" or "a first order of work" and state either:

- that other work may proceed concurrently provided that the Contractor maintains satisfactory progress in the first order of work, or
- that the Contractor must complete the first order of work before starting other work.

Existing Highway Facilities

This series of SSPs does not need to be discussed in detail in this guide; however, the following basic comments regarding existing highway facilities SSPs may help to prepare that portion of the contract special provisions. See Appendix 4D for the general definitions of existing highway facilities work.

Salvage

When the contractor is to salvage existing facilities, describe the destination of the salvaged material. Do not refer to existing facilities to be salvaged as "Remove and Salvage" but as just "Salvage". In general, you can use the SSPs for "Remove" existing facilities for "Salvage" items by changing the word "remove" to "salvage" and deleting the reference to disposal. Do not designate as "salvage" existing facilities that are to be reconstructed or otherwise reused in the work. On Highway Planting projects, do not show "salvage" on the plans. Salvaged materials are listed in the "Remove Existing Irrigation Facilities" SSP.

Reconstruction

A project may require that the contractor remove existing facilities (such as fence and guardrail) that are in satisfactory condition and that conform to the requirements for a new facility to be constructed on the same project. Contractors are not necessarily concerned with resource conservation. Therefore, rather than give the contractor the option of disposing of the removed facility and purchasing new materials to construct the new facility, specify that the contractor is to use the removed facility in the new work. This will avoid waste and needless use of new materials.

Removal

- Do not specify the method of removing traffic stripes and pavement markings. If the State specifies a method, then the State may become partially responsible for any damage done to the pavement or to the public. The Special Provisions can, however, forbid or restrict the use of any undesirable method.
 - The last 2 paragraphs in Section 15-2.07, "Payment," of the Standard Specifications act, in essence, as a "fail safe" to pay or compensate the contractor for removing existing highway facilities (except concrete) that are not being paid for separately by a contract item or included in another item of work. These paragraphs provide for removal work overlooked in the design phase; removal work of little cost; or removal of existing facilities which don't require a separate operation, such as dike removal in an excavation area. Note that if there is no item for clearing and grubbing and no item for excavation, the removal will be paid for under Section 15-2.07 as extra work - not always an economical way to pay for work that can be bid.
 - If a sign panel is to be relocated on a new post, the work should be considered new work under Section 56 of the Standard Specifications, "roadside sign-one post" or "roadside sign-two post", as the case may be. Select the appropriate SSP to cover removal of the sign, with a provision that the contractor is to reuse the sign panel as shown on the plans.
-

Highway Planting

The Standard Specification (Section 20-4.08, "Plant Establishment Work") provides for 2 types of plant establishment periods, each having a different effect on the total working days for a project. The SSP "Plant Establishment Work" provides for the selection of one of these two types of plant establishment periods. The types of plant establishment periods are as follows:

- Type 1 plant establishment period requires the contractor to complete all work on the project (highway planting, irrigation, and road work) before starting the plant establishment period. Upon completion of the roadwork, highway planting and irrigation work, the roadway can be open to public traffic during the plant establishment period. Since Type 1 plant establishment cannot start until road work is completed, it increases the total number of working days for a project. Type 1 should not be used on roadway construction projects.
- Type 2 plant establishment period requires the contractor to complete all highway planting and irrigation system work before starting the plant establishment work. Type 2 plant establishment work can be performed while other roadwork operations are in progress. The roadwork, highway planting, irrigation system work and plant establishment work shall be completed on or before the number of working days specified in the Special Provisions. Generally, Type 2 should be used only on roadway construction projects.

To determine which type of plant establishment to specify, evaluate the preliminary progress schedule. Show the scheduling of all highway planting and irrigation system work, including plant establishment, in relation to the road work.

Section 10-2, "Highway Planting and Irrigation System," is usually prepared by the District Landscape Architect. However, when the District submits a highway planting project or a road project with planting, the DOE should review Section 10-2 for consistency and completeness.

Concrete Structures

Use the terms "minor concrete" and "minor structure" as follows:

- "Minor concrete" is a less restrictive type concrete than the types designated by "Class". Minor concrete normally contains not less than 325 kilograms of Portland cement per cubic meter and is usually used to construct concrete items of a minor nature, such as drainage inlets, small headwalls, sidewalks, and curbs. Minor concrete does not require testing by the Engineer (but can be tested). Not all of the requirements for concrete in Section 90 of the Standard Specifications apply to minor concrete. Only Section 90-10, "Minor Concrete", and its references to other portions of Section 90 apply.
 - The term "minor structure" in parentheses following the Class of concrete or minor concrete designates that payment for that concrete includes compensation for reinforcement, excavation, and backfill required to construct the concrete item. All minor structures are to be identified on the Drainage Profiles, Drainage Details Sheets, and in the Drainage Quantities Table.
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4-4 MISCELLANEOUS**4-4.01 TRADE NAMES**

The term "trade names" as used in this section includes proprietary items and brand names.

Policy to Use Trade Names (Highway Projects)

Do not use trade names unless it is entirely impractical to furnish functional special provisions for a product or material. Do not use special provisions that would limit the bidding, directly or indirectly, to any one specific material or product.

Trade names may be used if:

- There is no other known material or product of equal or better quality that will perform the same function.
- Other agencies request a product or material by trade name to preserve uniformity with existing installations.
- Color reference is needed for multicolored tile.
- The trade name material or product is being used on an experimental basis with a clearly written plan for follow-up and evaluation.
- It is in the best interest of the public to use a trade name.

Where the use of trade names is absolutely necessary, include, in the special provisions, the trade names of all known materials or products manufactured in California that will meet the requirements of the work, and follow the listing of trade names with the words "or equal."

Where the use of only one trade name can be justified, the name must be followed with the words "or equal" as noted above. The District must also furnish a quotation from the manufacturer or supplier of the product or material, signed by a responsible official, giving the name and address of the firm which will sell the product or material, the price, the place of delivery, and agreement to sell to any contractor. The District must also specify the time span for which the price has been quoted and whether the price includes sales tax. This information will be included in the Special Provisions.

Approval to Use Trade Names (Highway Projects)

Use of trade names must have prior written approval as listed below. Trade names incorporated in current, approved SSPs have had prior written approval.

Requests for use of trade names for roadway items must include justification for their use and the approval of the District Director, or if specifically delegated, the District Chief, Division of Design.

Requests for use of trade names for structure items must be approved by the Chief, ES-Structures, Division of Structures Design.

Federally funded projects classified as "N", which require full Federal oversight, must have FHWA approval if less than 3 trade names for a product or material are specified. Obtain approval from FHWA before submitting the PS&E to ES-OE. No advance FHWA approval is needed when 3 or more trade names are used.

If the trade named product is to be used experimentally and the project has Federal participation and Federal oversight requirements, submit the request for FHWA approval to the Chief, State Project Development Procedures and Quality Branch. The request must include a work plan which indicates specific functional managers and units assigned responsibility to objectively follow-up, evaluate, and document the effectiveness of the trade name. See "Construction-Evaluated Research" of the Construction Manual for further details on the work plan and approval procedure.

Include with the PS&E submittal, copies of all correspondence documenting consideration and approvals of the use of trade names, and submit them separately to the Design and Local Programs.

The ES-Division of Materials Engineering and Testing and the Design and Local Programs District Coordinator can provide technical help with designs that use new materials, methods, and products.

Policy and Approval for Trade Names (Building Type Projects)

For architectural building type work, use functional specifications (such as Federal Standards or ANSI) whenever they are available. Also use functional specifications whenever they can be developed without excessive cost and can be worded so that the specifications are easily understood by general building contractors.

Use trade names only when no other options are feasible; otherwise the State may be accused of favoritism.

Trade names may be used without prior approval when the following conditions are met:

- Functional specifications are not available and cannot be reasonably developed.
- The product is a standard off-the-shelf manufactured item which is sold by several competing firms.
- At least 2 trade names are cited, followed by the words "or equal", (3 for Federally funded work), including all known acceptable products manufactured in California.
- The trade name is not an unreasonably expensive item as determined by ES-OE.

If it is impossible to furnish more than one trade name, follow the procedures required for use of one trade name for highway projects.

In some cases, specifications which avoid the use of trade names can be used.

Example:

"Enamel for washroom walls and ceilings shall be the top of the line grade of enamel manufactured for such use by a paint manufacturer who has been engaged in manufacturing paints to meet custom specifications for at least 15 years."

For architectural building type projects, follow the policy and approval for trade names on highway projects when the conditions stated above cannot be met.

4-4.02 RAILROAD INVOLVEMENT

There will usually be railroad involvement when work is to be performed in the railroad right of way, on an overhead, or on another structure over the railroad right of way. There may be railroad involvement even if an item is as small as attaching guard railing to the abutment of an underpass, jacking a pipe beneath the railroad roadbed, or entering railroad property for access to the work or to construct a fence.

If there is a railroad present on the Title Sheet of the project plans, contact the Railroad Agreements Section in ES-Structures for confirmation as to whether or not there is railroad involvement. This contact should be made as soon as possible - railroad agreements take considerable time to prepare.

The Railroad Agreements Section will normally furnish the information to complete Section 13 of the Special Provisions before PS&E submittal, provided the District gives sufficient advance notice.

The Railroad Agreements Section usually provides an electronic copy of the railroad clauses. Include the transmittal letter from ES-Structures, plus an electronic copy of the railroad clauses, as supplemental documents to the PS&E submittal if they are available when the PS&E is submitted to ES-OE.

4-4.03 ALTERNATIVE MATERIALS AND/OR CONSTRUCTION METHODS

It is the policy of Caltrans to allow optional materials and construction methods whenever feasible. In some cases it may also be necessary to include alternative bidding when the payment of the item involved is changed because of the alternative, i.e., steel bridge versus concrete bridge or different types of seal coats. Some SSPs include alternatives and therefore are not to be amended to reflect personal opinions.

APPENDIX 4A (Measurement and Payment Clauses)

A method of measurement and payment must be provided for all work shown on the plans and specified in the Special Provisions.

The Standard Specifications and Standard Special Provisions (SSPs) provide a method of measurement and payment for most items of work. Full justification must be provided in the PS&E submittal for any deviation from the method of measurement and payment provided in the Standard Specifications or Standard Special Provisions (SSPs).

The contractor is entitled to fair payment for work done. The plans and special provisions should furnish sufficient information for the contractor to bid the job.

The Special Provisions cover payment by the following methods:

Contract Item Pay Clause

The contract item pay clause is used to cover payment for a contract item of work not covered in the Standard Specifications or SSPs and is worded as follows:

The contract _____ ❶ _____ price paid per _____ ❷ _____ for ❸ _____ shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in ❹ _____, complete in place, including _____ ❺ _____ as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

❶ "Lump sum" if item is lump sum. "Unit" if item is each. No entry for other measurements (cubic meter, meter, etc.).

❷ For example: cubic meter, meter. No entry if lump sum or each and delete the word "per".

❸ Exact wording of the contract item used in the Engineer's Estimate.

❹ Description of work (contract item wording is usually sufficient).

❺ Special or unusual work or work that is normally paid for separately but is to be included in this contract item. (Note: Also used to exclude work.)

Modified Contract Item Pay Clause

Use the following modified clause when a contract item is to be measured and paid for in the same manner specified for a similar item in the Standard Specifications:

_____ ❶ _____ will be measured and paid for _____ ❷ _____ in the same manner specified for _____ ❸ _____ in Section _____ ❹ _____ of the Standard Specifications.

❶ Exact wording of the contract item.

❷ On a lump sum basis, by the cubic meter, etc. If "lump sum" is used, delete the words "measured and"

❸ Exact wording of the similar Standard Specifications item.

❹ Standard Specifications Section which provides payment for the item listed on ❸. (Include section number and title).

APPENDIX 4A (Continued)

Full Compensation Pay Clause

Use the full compensation clause to include compensation for work in another contract item instead of making a separate contract item. The correct wording is:

Full compensation for ① shall be considered as included in the contract ② price paid per ③ for ④ and no ⑤ therefor.

- ① The work which is not to be paid for separately.
- ② "Lump sum" if item is lump sum. "Unit" if item is each. No entry for other measurements.
- ③ Cubic meter, meter, etc. No entry if lump sum or each and delete the word "per".
- ④ Exact wording of the contract item which is to include compensation for work listed in ①. Should be the related contract item or in the "items of work involved" when the work is not necessarily tied to one item.
- ⑤ Use the phrase, "separate payment will be made" if the work listed in ① is usually a separate contract item. Use the phrase "additional compensation will be allowed" when ⑤ does not apply.

Notes:

- Payment is "made" and compensation is "allowed". "Allowing payment" or "making compensation" is not acceptable terminology.
- Do not use "separate payment will be allowed".
- Do not use "additional compensation will be made".
- The full compensation pay clause should include compensation for the work in one contract item if practical. If this is not possible, include compensation in the contract items of work which are involved.

APPENDIX 4A (Continued)

- Don't use the full compensation clause to cover minor or incidental work. Minor or incidental work is already covered by the contract price clause.
- Don't use a full compensation clause and a contract price clause together. The contract price clause should cover the requirements of the intended full compensation clause.
- Always include a full compensation clause when work which is normally paid for separately (such as excavation, reinforcement) is to be included in an item covered by Standard Specifications.
- Don't use a full compensation clause to hide major work in another item. Don't include an item of work that has a higher estimated value in an item of lesser value. (Example: Don't full compensate a \$1000 item in a \$500 item).
- Full compensation pay clauses are useful in eliminating nuisance items (items which have a small value), but should be used with judgment and restraint for the following reasons:
 - Full compensation pay clauses make it difficult to adjust the price of the contract item or items in cases of increases or decreases which exceed 25 percent.
 - Full compensation pay clauses result in misleading data being used to calculate the cost summaries published in the "Contract Cost Data Book."
 - Inequitable payments may occur in the case of underruns and overruns within the 25 percent allowable.
- The State does not save money by including the cost of one item in another. On the contrary, the net cost increases because the contractor will not be paid for the work on a unit basis but will have to estimate the work to be done.

APPENDIX 4A (Continued)**Transfer Pay Clause**

Use this type of pay clause to pay for the quantity of one item of work as another contract item. The correct wording for a transfer pay clause is:

① will be measured and paid for as **②** .

① Item of work which is paid for as the contract item listed in **②** .

② Exact wording of the contract item.

A common error is to use a full compensation pay clause when a transfer pay clause is the correct pay clause to use.

Extra Work Pay Clause

Generally, include payment for all planned or anticipated work in the contract items.

Pay for work of unforeseeable extent or necessity as extra work.

Do not include in the special provisions any special provisions covering work classified as extra work. However, if there could be any doubt in the bidder's mind of how a portion of the work is to be paid for, define in the special provisions the work classified as extra work. Use this wording:

① will be paid for as extra work as provided in Section 4-1.03D, "Extra Work," of the Standard Specifications.

① The work to be paid for as extra work.

APPENDIX 4A (Continued)**The "No Adjustment Clause"**

Certain items in the Standard Specifications are excluded from coverage of Section 4-1.03B, "Increased or Decreased Quantities". You should (1) avoid, if possible, adding items to those listed, or

(2) fully justify adding items you consider essential.

Avoid combining adjustable and non-adjustable items in the Preliminary Estimate. If you combine small quantities, remember to specify in the special provisions that the normally non-adjustable item is to be made adjustable.

APPENDIX 4B (Items Eligible for Partial Payments for Materials On Hand)

Item No.	Items Eligible for Partial Payments for Materials On Hand (EXCEPT WHEN PRECEDED BY "FURNISHED")
20----	Irrigation Controllers
20----	Field Units and Base Station
20----	Irrigation Controller Enclosure Cabinets
20----	Pipe (Irrigation Systems)
20----	Backflow Preventers
20----	Backflow Preventer Assembly Enclosures
20----	Sprinklers
20----	Valves
20----	Welded Steel Pipe Conduit
20----	Corrugated Steel Pipe Conduit
2095--	Irrigation Pump and Equipment
	Irrigation Booster Pumps
39----	Pavement Reinforcing Fabric
	Prestressing Steel for Post-Tensioned Member - including Anchor Plates and Ducts*
49----	Piling
50----	Tieback Anchors
51----	Precast Concrete Members
51----	Spherical Bearings
51----	Sound Wall (Masonry Block, Precast Concrete, Panels, Timber)
519---	Type B Joint Seals and Joint
	Seal Assemblies
5201--	Bar Reinforcing Steel
5501--	Structural Steel
55----	Isolation Casings
5570--	Crib Wall Members
56----	Metal Sign Structures (including Changeable Message Sign Structure)
62- to 66-	Culvert Pipe
67----	Structural Plate Installations
68----	Underdrain Pipe
68----	Edge Drain Pipe
68----	Filter Fabric
68----	Horizontal Drain Pipe
69----	Overside Drains and Appurtenances
70----	Miscellaneous Drainage Facilities
70----	Welded Steel Pipe
7110-- to 7180-	Sewer Pipes and Appurtenances

APPENDIX 4B (Continued)

Item No.	Items Eligible for Partial Payments for Materials On Hand (EXCEPT WHEN PRECEDED BY "FURNISHED")
72---	Rock Slope Protection Fabric
7405--	Drainage Pumping Equipment
7410--	Pumping Plant Electrical Equipment
7500--	Miscellaneous Iron and Steel
7505--	Miscellaneous Metal
75----	Miscellaneous Bridge Metal
80----	Fences and Gates
832--- to 8330--	Railings
839---	Barriers (except concrete barriers)
83----	Crash Cushions
8501--	Pavement Markers
86--- to 8690--	Lighting Fixtures
	Luminaires
	Signal and Lighting Standards
	Signal Heads and Mounting Brackets
	Irrigation Controller Enclosure Cabinets
	Camera Assemblies
	Signal Cabinets
	Twisted Pair Cable
	Splice Vaults
	Fiber Optic Cable
	Innerducts
	Fiber Optic Conduit
* Criteria for including prestressing steel in partial payments are: <ul style="list-style-type: none"> • project is 120 days or longer. • Such prestressed structures have an estimated value exceeding \$500,000. • Material is listed as: "Prestressing steel for cast-in-place members (sealed packages only)." 	

APPENDIX 4C (Climate Areas)

To define variations in special provisions and details needed to suit conditions of traffic and exposure, the State is divided into three types of climate (environmental) areas.

Area I Mild climate, where frost is rare, or where, because of light traffic volumes, de-icing chemicals are applied infrequently. This area includes all portions of the State not specifically itemized as Areas II and III.

Area II Moderate climate, where frost or light freezing occurs, but tire chains are seldom used. Salting of bridge decks is done only in rare or emergency instances.

Area III Severe climate, where free-thaw cycles and heavy salting occur frequently and where tire chains are used.

Dist	Route	County	Area I			Area II			Area III		
			BPM		EPM	BPM		EPM	BPM		EPM
1	36	Hum	0.0		25.0		—		25.0		47.9
	36	Tri		—			—			All	
	101	DN	2.6		12.5		—		0.0		2.6
			22.5		46.5		—		12.5		22.5
	101	Hum	0.0		128.0		—		128.0		135.0
	101	Men	65.0		83.0	0.0		65.0	83.0		100.0
			100.0		104.2						
	162	Men		—			All			—	
	199	DN	0.0		15.0		—		15.0		36.4
	208	Men	0.0		6.0		—		6.0		14.7
	299	Hum	0.0		14.3		—		14.3		34.1

2	3	Sis		—			—			All	
	3	Tri		—			—			All	
	5	Sis		—			—			All	
	5	Sha		—		0.0		15.4	15.4		65.6
	5	Teh		—			All			—	
	32	Teh		—			—			All	
	36	Tri		—			—			All	
	36	Sha	8.7		12.0		—		0.0		8.7
	36	Teh	70.0		73.0	0.0		70.0	73.0		104.0
	36	Las		—			—			All	
	36	Plu		—			—			All	
	44	Sha		—			—			All	
—	44	Las		—			—			All	
	49	Plu		—			—			All	
	70	Las		—			—			All	

APPENDIX 4C (Continued)

Dist	Route	County	Area I			Area II			Area III		
			BPM		EPM	BPM		EPM	BPM		EPM
2	70	Plu		—			—			All	
Cont'd	89	Plu		—			—			All	
	89	Sha		—			—			All	
	89	Sis		—			—			All	
	89	Teh		—			—			All	
	96	Sis		—			—			All	
	97	Sis		—			—			All	
	99	Teh		—			All			—	
	139	Las		—			—			All	
	139	Mod		—			—			All	
	139	Sis		—			—			All	
	147	Las		—			—			All	
	147	Plu		—			—			All	
	151	Sha		—			—			All	
	161	Sis		—			—			All	
	172	Teh		—			—			All	
	273	Sha		—		0.0		16.1	16.1		20.0
	299	Las		—			—			All	
	299	Mod		—			—			All	
	299	Sha		—			—			All	
	299	Tri		—			—			All	
	395	Las		—			—			All	
	395	Mod		—			—			All	

3	5	Col		—			All			—	
	5	Gle		—			All			—	
	5	Sac		—			All			—	
	5	Yol		—			All			—	
	16	Sac		—			All			—	
	16	Yol		—			All			—	
	20	Col		—			All			—	
	20	Nev		—			—			All	
	20	Sut		—			All			—	
	20	Yub		—			All			—	
	28	Pla		—			—			All	
	32	But		—			All			—	
	32	Gle		—			All			—	
	45	Gle		—			All			—	
	49	ED		—			—			All	
	49	Nev		—			—			All	
	49	Pla		—			—			All	
	49	Sie		—			—			All	

APPENDIX 4C (Continued)

Dist	Route	County	Area I			Area II			Area III		
			BPM		EPM	BPM		EPM	BPM		EPM
3	49	Yub		—			—			All	
Cont'd	50	ED		—		0.0		15.0	15.0		80.4
	50	Sac		—			All			—	
	65	Pla		—			All			—	
	65	Sac		—			All			—	
	65	Yub		—			All			—	
	70	But		—		0.0		20.5	20.5		25.3
	70	Sut		—			All			—	
	70	Yub		—			All			—	
	80	Nev		—			—			All	
	80	Pla		—		0.0		17.5	17.5		69.8
	80	Sac		—			All			—	
	80	Sie		—			—			All	
	80	Yol		—			All			—	
	89	ED		—			—			All	
	89	Nev		—			—			All	
	89	Pla		—			—			All	
	89	Sie		—			—			All	
	99	But		—			All			—	
	99	Sac		—			All			—	
	99	Sut		—			All			—	
	104	Sac		—			All			—	
	113	Sut		—			All			—	
	113	Yol		—			All			—	
	149	But		—			All			—	
	160	Sac		—			All			—	
	162	But		—			All			—	
	162	Gle	0.0		37.6	37.6		84.6		—	
	174	Nev		—			—			All	
	174	Pla		—			—			All	
	193	ED	0.0		13.0		—		13.0		27.0
	267	Nev		—			—			All	
	267	Pla		—			—			All	
	275	Yol		—			All			—	
	880	Sac		—			All			—	
	880	Yol		—			All			—	

APPENDIX 4C (Continued)

Dist	Route	County	Area I			Area II			Area III		
			BPM		EPM	BPM		EPM	BPM		EPM
4	1	SCr	0.0		13.6	13.6		17.5'		—	
			17.5		37.5		—			—	
	17	SCr	7.0		13.9	0.0		7.0		—	
	17	SCr		—			All			—	
	101	Son	0.0		3.6	3.6		56.2		—	
5	All	All		All			—			—	
6	5	Fre		—			All			—	
	5	Ker		—		10.0		87.0	0.0		10.0
	5	Kin		—			All			—	
	33	Fre		—			All			—	
	33	Ker		—			All			—	
	33	Kin		—			All			—	
	41	Fre		—			All			—	
	41	Kin		—			All			—	
	41	Mad		—		0.0		32.0	32.0		44.0
	41	Mpa		—			—			All	
	43	Ker		—			All			—	
	43	Kin		—			All			—	
	43	Tul		—			All			—	
	46	Ker	0.0		30.0	30.0		57.8		—	
	58	Ker		—			All			—	
	63	Tul		—			All			—	
	65	Ker		—			All			—	
	65	Tul		—			All			—	
	99	Fre		—			All			—	
	99	Ker		—			All			—	
	99	Mad		—			All			—	
	99	Tul		—			All			—	
	119	Ker		—			All			—	
	145	Fre		—			All			—	
	145	Mad		—			All			—	
	152	Mad		—			All			—	
	155	Ker		—		0.0		40.0	40.0		71.3
	166	Ker		—			All			—	
	168	Fre	0.0		40.0		—		40.0		65.9
	178	Ker		—		0.0		35.0	35.0		57.1
	180	Fre	0.0		23.0	23.0		93.0		—	
			93.0		136.0		—			—	

APPENDIX 4C (Continued)

Dist	Route	County	Area I			Area II			Area III		
			BPM		EPM	BPM		EPM	BPM		EPM
6	190	Tul		—		0.0		32.8	32.8		57.5
Cont'd	198	Fre	0.0		22.0	22.0		42.0		—	
			42.0		44.2		—			—	
	198	Kin		—			All			—	
	198	Tul	0.0		22.0	22.0		42.0		—	
	201	Tul		—			All			—	
	204	Ker		—			All			—	
	216	Tul		—			All			—	
	223	Ker		—			All			—	
	245	Tul		—			All			—	

7	2	LA	00		38.4		—		38.4		82.3
	5	LA	00		81.5		—		81.5		88.6
	14	LA	00		34.0		—		34.0		59.5

8	2	SBd		—			—			All	
	10	Riv	190		44.5		—		0.0		19.0
	10	SBd	00		34.0		—		34.0		39.2
	15	SBd	00		13.0		—		13.0		32.0
			320		147.0		—		147.0		186.2
	18	SBd	00		7.0		—		7.0		73.8
			738		115.9		—			—	
	38	SBd	00		15.0		—		15.0		59.4
	40	SBd	00		70.0		—		70.0		90.0
			900		154.6		—			—	
	60	Riv	00		20.0		—		20.0		30.5
	62	Riv	00		7.3		—		7.3		9.2
			92		90.2		—			—	
	62	SBd	480		142.7		—		0.0		48.0
	74	Riv	00		49.0		—		49.0		84.0
			840		96.0		—			—	
	79	Riv	00		31.3		—		31.3		40.5
	138	SBd		—			—			All	
	173	SBd		—			—			All	
	189			—			—			All	
	243	Riv		—			—			All	
	247	SBd	420		78.1		—		0.0		42.0
	330	SBd	00		29.5		—		29.5		44.2

APPENDIX 4C (Continued)

Dist	Route	County	Area I			Area II			Area III		
			BPM		EPM	BPM		EPM	BPM		EPM
9	6	Iny		—			—			All	
	6	Mno		—			—		0.0		32.3
	58	Ker	00		77.0		—		77.0		108.0
			1080		143.9		—			—	
	89	Mno		—			—		0.0		7.6
	108	Mno		—			—			All	
	120	Mno		—			—		0.0		60.0
	136	Iny		—		00		17.7		—	
	158	Mno		—			—			All	
	167	Mno		—			—		0.0		21.3
	168	Iny		—			—			All	
	168	Mno		—			—		0.0		1.5
	178	Ker	00		57.0	570		88.2		—	
			882		104.6		—			—	
	182	Mno		—			—			All	
	190	Iny		—		245		76.5		—	
	202	Ker		—		00		12.1		—	
	203	Mno		—			—			All	
	266	Mno		—		00		11.7		—	
	270	Mno		—			—		0.0		9.8
	395	Iny	00		73.0		—		73.0		129.4
	395	Mno		—			—			All	

10	4	Alp		—			—			All	
	4	Cal	00		21.4		—		21.4		65.9
	5	Mer		—			All			—	
	5	Sta		—			All			—	
	5	SJ		—			All			—	
	12	Cal	100		18.2	00		10.0		—	
	12	SJ	00		6.0	60		27.6		—	
	26	Cal	120		25.0	00		12.0	25.0		34.8
			348		38.3		—			—	
	26	SJ		—			All			—	
	33	Mer		—			All			—	
	33	Sta		—			All			—	
	49	Ama		—			—			All	
	49	Cal		—			—			All	
	49	Mpa		—			—			All	
	49	Tou		—			—			All	

APPENDIX 4C (Continued)

Dist	Route	County	Area I			Area II			Area III		
			BPM		EPM	BPM		EPM	BPM		EPM
	59	Mer		—			All			—	
	88	Alp		—			—			All	
	88	Ama	100		14.3	00		10.0	14.3		71.7
	88	SJ		—			All			—	
	89	Alp		—			—			All	
	99	Mer		—			All			—	
	99	SJ		—			All			—	
	99	Sta		—			All			—	
	108	Tou		—			—			All	
	120	Cal		—			All			—	
	120	SJ		—			All			—	
	120	Tou	00		8.8		—		8.8		56.5
	132	Sta		—			All			—	
	140	Mpa		—		00		11.0	11.0		51.8
	140	Mer		—			All			—	
	152	Mer		—			All			—	
	165	Mer		—			All			—	
11	8	SD	00		35.0		—		35.0		77.8
12	All	All		All			—			—	

APPENDIX 4D (General Definitions of Existing Highway Facilities Work)

TYPE OF WORK	DEFINITION
REMOVE	Remove and dispose of.
ABANDON	Render unserviceable, in place, by doing some kind of work.
SALVAGE	Remove, clean, and haul to recycle center.
RESET	Remove and install or place at same station location. May be moved laterally only. No alteration required.
RELOCATE	Remove and install or place in a new location. No alteration required.
RECONSTRUCT	Remove and disassemble and construct again at an existing or new location. New parts or alteration may or may not be required.
ADJUST	<p>Raise or lower a facility to match a new grade line. Generally associated with raising frames and grates or frames and covers of facilities on resurfacing projects. May require some removal.</p> <p>Includes raising or lowering of frames and covers or frames and grates of concrete or brick manholes or circular precast concrete pipe structures by adding or subtracting raising devices only. Any changes to taper of manhole or steps is "remodel."</p>
MODIFY	<p>A change which does not affect the basic framework or structure with only an addition or subtraction to an appurtenant part. May require some removal.</p> <p>Includes raising or lowering frame and covers or frame and grate of drainage inlets by removing concrete or adding concrete.</p>
REMODEL	Rebuild facility in same location. May require some removal.
RELAY	Remove and lay in an existing or new location. Generally used for pipes or culverts and appurtenances.

APPENDIX 4E (Standards for Formatting and Editing Contract Special Provisions)**Document Formatting**

To ensure statewide uniformity and to prevent special provision printing problems, it is important that you create your project specifications by using the Standard Special Provisions and the format "styles" within them.

Styles - Several paragraph formats are used in the special provisions (see SSPs for examples). **Do not use spaces (space bar) to indent the first line. Only use tabs with the "Indent Hanging" styles.** Text is to be Times New Roman font and 12-point font size, except tables are in 10-point font. Do not use "modified" styles; use only those styles that are in the "SSP_Template". Margins are set within the "styles". **Do not use the "Ruler" to set margins or tabs.**

- Normal - The "Normal" paragraph format is the full document width (margin to margin). Most text will be formatted with the "Normal" style.
- Indent Hanging - Do not use spaces or tabs to indent subparagraphs. Use "Indent Hanging" styles to achieve desired formatting. Insert a "tab" after the paragraph letter or number. "Indent 1 Hanging" style is used for first-level subparagraphs, which are lettered. "Indent 2 Hanging" style is used for second-level subparagraphs, which are numbered.
- Instructions – Paragraph numbers and instructions for use of the SSP and paragraphs are formatted in "Hidden Text".
- Header – SSP numbers are formatted in "Hidden Text" and are right justified.
- Comments - Indicators used to identify an edited paragraph are formatted in "hidden text" and are right justified.
- Heading - Heading 1, Heading 2, and Heading 3 are to be used for Section or Subsection Titles which will appear in the table of contents.

Tables - Only use the "Table" command to create tables. **Do not use spaces (using the space bar) to create tables.** The total width of a table **is not to exceed 6.50 inches** regardless of the number of columns.

APPENDIX 4E (Continued)

SSP Editing

ES-OE has established editing standards to ensure Statewide uniformity and to make it easier to review the specifications and prepare the final contract documents. **Adhere to these standards .**

Indicate all changes to the Standard Special Provisions with a double asterisk (in Hidden Text) formatted using the "**Comment**" format style.

Indicator	Purpose and Usage
User Initials and ** For Example: JAD**	Use a double asterisk to indicate a new paragraph that has been added to an SSP or to indicate SSP paragraph that has been edited. Add user initials and the double asterisk preceding the edited paragraph. Add information about the changes. For large projects which have many changes, the date of the change can be useful.
User Initials and ## For Example: JAD##	Use a double pound sign to indicate a new paragraph that has been added to an SSP or to indicate SSP paragraph that has been edited by ES-Structures. Add user initials and the double pound sign preceding the edited paragraph.
NEW, User Initials and ** For Example: NEW JAD**	Use this indicator when you have added a totally New Subsection. A new subsection includes any new special provision that has a new subsection title. Do not use this when an existing SSP has been edited or modified. Add the indicator "NEW" followed by user initials and double asterisk indication preceding the new section.
Underline (Blue)	Underline, in blue, any new text that is added to an SSP regardless of where it is added. New paragraphs that are added to an existing SSP are to be underlined and indicated with the double asterisk.
Strikethru/ Hidden Text (Red)	Text that is to be deleted from an SSP is to be formatted with the "strike through" and "hidden text" character styles in red. Do not strike through/hide instructions, paragraph numbers, or any other text that is to remain hidden. Do not use the Microsoft Word "Track Changes" function.

APPENDIX 4E (Continued)

ES-OE will indicate all changes to the District draft specifications with a triple asterisk (in Hidden Text) formatted using the "Right" format style. These have been pre-programmed into the Macintosh system for your convenience. Edited text is to be indicated as shown below.

Indicator	Purpose and Usage
User Initials and*** For Example: JAD***	ES-OE uses a triple asterisk to indicate a new paragraph that has been added to an SSP or to indicate a paragraph that has been edited. ES-OE adds the user initials and triple asterisk preceding the edited paragraph.
NEW, User Initials and*** For Example: NEW JAD***	ES-OE uses this indicator when adding a totally New Subsection. This will not be used when an existing SSP has been edited or modified. The "NEW" followed by user initials and triple asterisk indication will be added preceding the new section.
ADDED, User Initials and*** For Example: ADDED JAD***	ES-OE will use this when it adds an SSP to the PS&E submittal.
UPDATED, User Initials and*** For Example: UPDATED JAD***	ES-OE will use this to indicate when it has updated an out-of-date SSP. It will be inserted before the SSP No.
DELETED, User Initials and*** For Example: DELETED JAD***	ES-OE will use this to indicate when it has deleted an SSP in the original PS&E submittal. The entire SSP except the SSP No. and issue date will be deleted. It will be inserted before the SSP No.
Underline (Blue)	ES-OE will underline in blue any new text that it adds to an SSP regardless of where it is added. New paragraphs that are added to an existing SSP will be underlined and indicated with the triple asterisk.
Strikethru/ Hidden Text (Red)	Text that is to be deleted from an SSP will be formatted with the "strike through" and "hidden text" character styles in red.

APPENDIX 4E (Continued)

When it is necessary to add a totally new special provision that does not fall within an existing SSP, give the subsection a subsection title. Subsection titles should be formatted with a Heading 1, Heading 2, or Heading 3 style.

example:

3-1.01 GENERAL

The bidder's attention is directed to the provisions in Section 3, "Award and Execution of Contract," of the Standard Specifications and these special provisions for the requirements and conditions concerning award and execution of contract.

5 PROJECT PLANS

5-1 GENERAL

Project plans are engineering drawings containing information from which contractors prepare bids, surveyors stake the project, successful bidders construct projects, and engineers inspect the contractor's work. These plans, as revised during construction, become permanent records in the form of As-Built plans for future reference.

Project plans are to be prepared following the standards set forth in Section 2 of the Plans Preparation Manual. Computer-aided Design and Drafting (CADD) prepared plans are to conform to the standards and procedures contained in the CADD Users Manual of Instructions. All project plans are to be developed on CADD.

5-2 PROJECT PLAN ENGINEERING REVIEW

Review the project plans to ensure that sufficient information is provided so that the work shown is both biddable and buildable. General guidelines for engineering review are provided below. Additional engineering review information is provided in Section 2 of the Plans Preparation Manual. Checklists for plan verification are provided in Appendix 1A of this Guide and in Section 2 of the Plans Preparation Manual.

Typical Cross Sections Sheets

Elements of the structural section(s) are to be identified and thickness of the layers shown. Dimensions should be referenced to centerline or layout lines. Structural section designation numbers, if used, are to be consistent with those shown on the layout sheets of the plans.

Layout Sheets

These plan sheets are to adequately show the work to be performed. Layout line/centerline designations and horizontal alignment (curve data) are to be shown. Cut and fill lines, pavement removal, existing pavements, curbs, dikes, sidewalks, driveways, wheelchair ramps, road approaches, right of way lines, and topography (when pertinent) are to be shown. Legends and symbols used which are not included in the Standard Plan abbreviations and symbols must be defined.

Profile Sheets

These plan sheets should show layout line/centerline designations (consistent with layout sheets), original ground line, and profile grade line. Roadway excavation and embankment quantities should be shown at the bottom of the profile or summarized on the summary of quantities sheet.

Construction Details Sheets

These sheets should provide supplemental information that cannot be shown on the layout plan sheets because of complex and extensive details required. The details shown on the Construction Detail Sheet are unique to a specific project and not available in the Standard Plans.

Drainage Plan and Drainage Profile Sheets

Drainage plans should show layout and location of drainage facilities. System and unit identification of drainage facilities should be shown. Drainage profiles should show original ground line, finished grade lines and flow lines of drainage facilities. Construction details should be provided for drainage facilities for which there are no Standard Plans. A drainage summary of quantities is to be provided with columns for all drainage facilities which are pay items.

Utility Sheets

Existing utilities are to be clearly and accurately depicted on the project plans. Where utilities are to be relocated, existing and final location of the utilities are to be shown on the project plans. If high risk utilities are identified on the plans, both elevation and horizontal alignment of the facilities are to be shown. In some cases, only horizontal alignment is required. Refer to "Policy on High and Low Risk Facilities within Highway Rights of Way".

Generally, alignment and elevation for high risk facilities need not be known for:

- resurfacing, pavement markers, grinding, grooving, and curb ramp projects where planned excavation is 150 millimeters or less below the existing ground level and
- pavement removal or trenching beneath existing pavement where planned excavation is 300 millimeters or less below existing road surface.

Only horizontal alignment is necessary if the high risk facility is more than 1.1 meters below the lowest planned work or if the facility is 1.2 meters or more horizontally from the side of the excavation.

High risk facilities are identified in Section of the Standard Special Provisions and in the booklet, "Policy on High and Low Risk Underground Facilities within Highway Rights of Way".

All projects must conform to the "Policy on High and Low Risk Underground Facilities within Highway Rights of Way". Submit any deviation from the policy to Chief, Office of High and Low Risk Exceptions in the State and Local Project Development Program, Design and Local Programs for approval. Include a copy of the approval with the PS&E submittal.

Stage Construction and Traffic Handling Sheets

Traffic handling plans should show how traffic is to be routed and maintained within the limits of the project. This may require rerouting or detouring traffic. If stage construction is required, the plans should show the sequence of operation, work to be performed, materials to be used, and the traveled way to be used for all movements of traffic during each construction sequence.

Summary of Quantities Sheets

Summary of Quantities are an aid in determining the location and quantities for pay items which are located throughout the plans. Quantities must be calculated for items such as miscellaneous concrete construction (curbs, sidewalks and so on), dikes, guard railing, and fencing. Column headings for pay items should read the same as the description for the pay item shown in the Engineer's Estimate. Items of work shown in the tabulations which are not a separate pay item but are included in other items of work are to be indicated with the symbol "(N)" in the column heading. Add the following note to the plan sheet:

(N) = Not a separate pay item; for information only.

When tables summarize quantities from other plan sections--for example, Place Asphalt Concrete (Miscellaneous Areas) from drainage quantities--describe their origin by note.

(Example: "From Drainage Quantities").

If the quantity shown on the summary is incomplete, describe where the additional information can be found.

(Example: Note: See Structures plans for additional concrete barrier quantities.)

Other Plan Sheets

Verify that plans are provided for construction area signs, pavement delineation, signs, and work shown or indicated on the layout sheets.

Verify that cross-referenced details, drawings and plans are included in the project plans.

Final Pay Quantities

Where quantities are to be final pay, provide sufficient plan detail with dimensions and information so the final pay quantities may be confirmed independently, unless details are already shown in the Standard Plans for the item of work. Quantities must be tabulated in the Summary of Quantities sheets, Drainage Quantities sheets, Sign Quantities sheets or Structures General Plan sheet, as appropriate. Quantities available on Standard Plan sheets (such as number of kilograms of miscellaneous iron and steel for frames and grates) should be used where applicable.

Final pay items are not to be designated on the plans. Designate final pay in the Engineer's Estimate as described in Section 3-2.04 of this Guide.

5-3 PROJECT PLAN SUBMITTAL

Submit the plans portion of the PS&E submittal as provided in Section 2 of this Guide.

5-4 PROJECT PLAN REVISIONS

When submitting District proposed plan revisions or plan revisions requested by ES-OE after PS&E submittal, follow these guidelines:

- Notify the project ES-OE Specifications Engineer, in writing or by e-mail, that revisions are being submitted.
- Submit "redline" prints which clearly indicate the proposed or requested plan revisions.
- Include a new PS&E CADD Submittal Form with the revised originals, and identify it as a "Revised Submittal" in the appropriate check-off box on the top of the Form.

When delineation of the final plans is completed, ES-OE returns the "redline" plans to the DOE unless structures plans are part of the project. In that case, ES-OE separates the "redline" plans and returns the road portion to the DOE and the structures portion to ES-Structures.

The DOE and ES-Structures must make the returned "redline" prints available in their offices for review and verification by the responsible persons with their signature and seal on the plans. The "redline" prints are to remain in the possession of the DOE and ES-Structures until award of the project. When the project is awarded, the final CADD file is sent back to the DOE and to the ES-Structures (if applicable) and the "redline" prints are destroyed.

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